SOAP AND CHEMICAL SPECIALTIES

AUGUST 1961

Kirby Peake, newly elected president of Carter Products, Inc., New York, producers of "Rise" aerosol shave cream, succeeds Henry H. Hoyt, who becomes chairman. Mr. Peake joined Carter in 1959 as administrative vice-president. He became a director in 1960.

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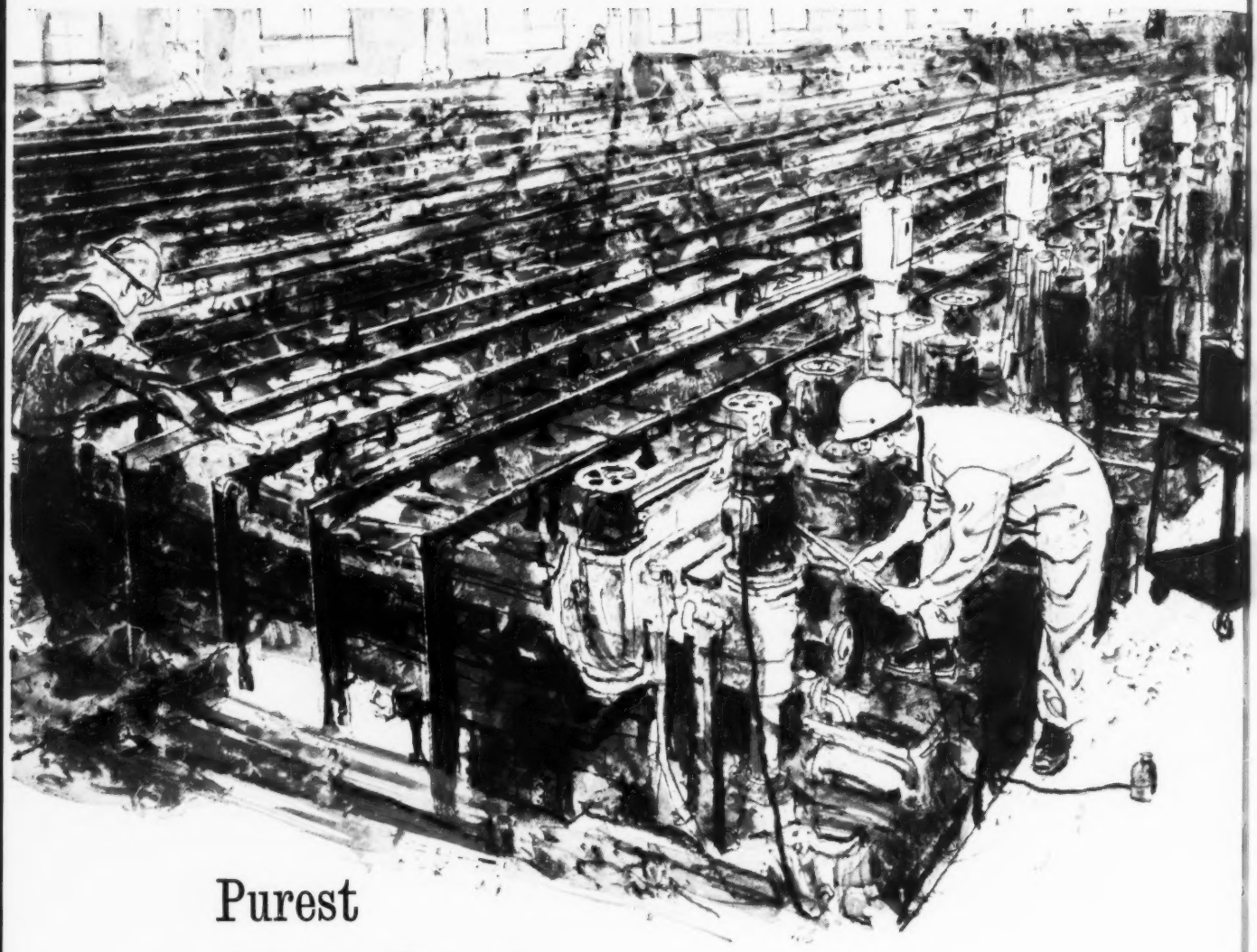

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It makes sense to see Solvay – the leading and most experienced commercial producer – for highest purity Mercury Cell Grade Caustic Potash.

Solvay pioneered in the mercury cell technique. From row after row of complex mercury cells in Solvay's Syracuse plant comes a product that has set the industry's quality standards.

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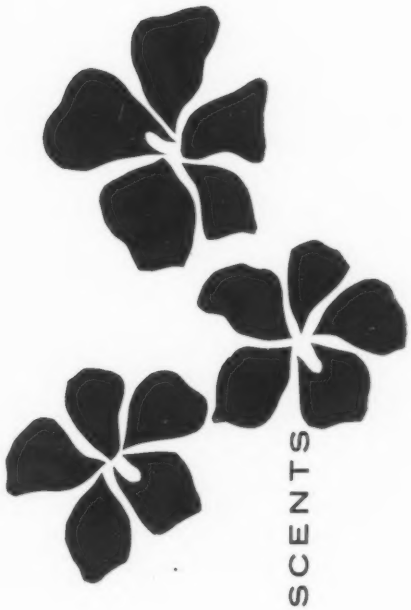

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AND KINDRED PRODUCTS... **Your Quality Guide...**

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Each of Candy's floor waxes are all-around top quality for certain traffic conditions. They impart the finest protection and beauty to floors for which best suited.

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CANDY'S SUPREME Special WR
SUPER CAND-DOX®
CAND-DOX® #CS
CANDI-WAX #6000

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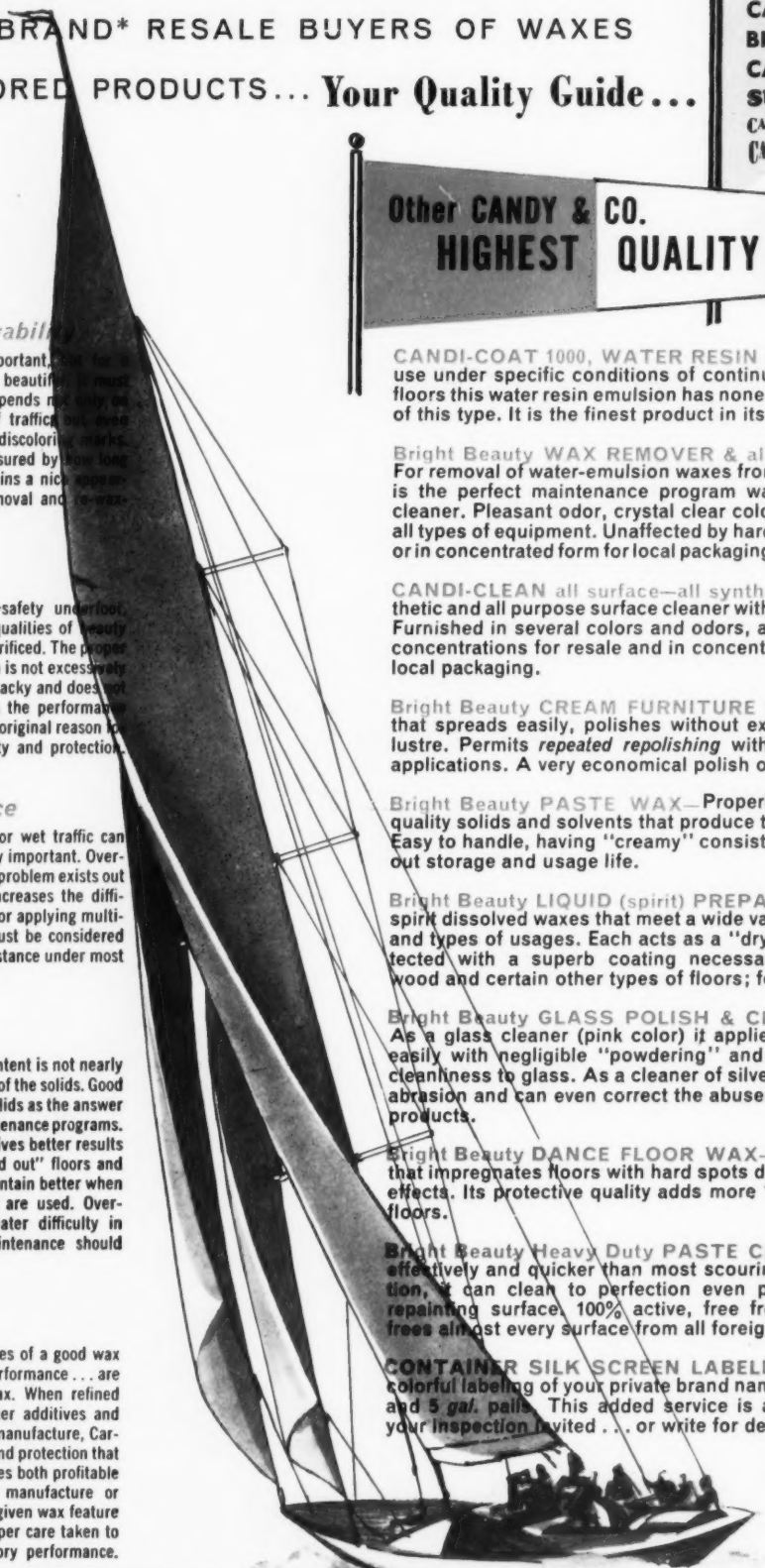

Beauty and Durability

Initial appearance is important, but for the waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to abrasion of traffic but even more so on resistance to discoloring marks. Durability should be measured by how long the waxed surface maintains a nice appearance before complete removal and re-waxing is required.

Anti-Slip

Anti-slip, or reasonable safety underfoot, does not mean that the qualities of beauty and protection need be sacrificed. The proper balance—a wax film which is not excessively slippery, yet which is not tacky and does not collect dirt readily—gives the performance that answers the foremost original reason for use of a floor wax—beauty and protection.

Water Resistance

Frequent damp mopping or wet traffic can make water resistance very important. Overdoing this quality when no problem exists out of the ordinary, simply increases the difficulty of complete removal or applying multiple coats. Removability must be considered as important as water-resistance under most normal conditions.

Solid Content

The percentage of solid content is not nearly as important as the **quality** of the solids. Good quality indicates 12% of solids as the answer for most well planned maintenance programs. Two applications of 12% gives better results than one of 18%. "Washed out" floors and other special problems maintain better when more concentrated waxes are used. Overwaxing and resultant greater difficulty in removal for periodic maintenance should be avoided.

Carnauba Wax

The most important features of a good wax ... all-around quality of performance ... are built around Carnauba Wax. When refined and compounded with other additives and scientifically controlled in manufacture, Carnauba imparts the beauty and protection that makes the use of floor waxes both profitable and possible. Make-shift manufacture or over-emphasis on any one given wax feature should be avoided and proper care taken to provide for most satisfactory performance.

CANDI-COAT 1000, WATER RESIN EMULSION—As a floor coating for use under specific conditions of continued maintenance on certain types of floors this water resin emulsion has none of the faults associated with coatings of this type. It is the finest product in its class produced up to this time.

Bright Beauty WAX REMOVER & all-purpose SURFACE CLEANER—For removal of water-emulsion waxes from any floor without harmful effects. It is the perfect maintenance program wax remover and all-purpose surface cleaner. Pleasant odor, crystal clear color and thorough cleaning action with all types of equipment. Unaffected by hard freezing. Furnished ready for resale or in concentrated form for local packaging ... nothing but water to buy or mix in.

CANDI-CLEAN all surface—all synthetic CLEANER—This is an all synthetic and all purpose surface cleaner with free rinse and free wipe off qualities. Furnished in several colors and odors, and properly priced. Available in two concentrations for resale and in concentrated form for dilution with water for local packaging.

Bright Beauty CREAM FURNITURE POLISH—A cream furniture polish that spreads easily, polishes without excessive effort to a deep impressive lustre. Permits *repeated repolishing* with a dry cloth, thus saving many re-applications. A very economical polish of the very highest quality.

Bright Beauty PASTE WAX—Properly blended and refined from excellent quality solids and solvents that produce the best drying time and evaporation. Easy to handle, having "creamy" consistency and stability that lasts throughout storage and usage life.

Bright Beauty LIQUID (spirit) PREPARED WAXES—A complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each acts as a "dry cleaner" to keep surfaces wax protected with a superb coating necessary for many applications such as wood and certain other types of floors; for bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH—As a glass cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanliness to glass. As a cleaner of silver, it polishes to a high lustre *without* abrasion and can even correct the abuses of scratchy "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX—Does not "ball-up" and gather dirt that impregnates floors with hard spots difficult to remove ... free from dusty effects. Its protective quality adds more "floor-years" to expensive ballroom floors.

Bright Beauty Heavy Duty PASTE CLEANER—*Cleans* and *scours* more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive qualities, it frees almost every surface from all foreign matter.

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*All Candy's products are available for private brand resale and are sold only through distributors except for experimental accounts in Chicago essential to research.

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2515 W. 35th ST., CHICAGO 32

Vol. XXXVII, No. 8 August, 1961

Cover Photo: Kirby Peake, newly elected president of Carter Products, Inc., New York, succeeds Henry H. Hoyt, who becomes chairman. Mr. Peake joined Carter in 1959 as executive vice-president. He was elected a director in 1960.

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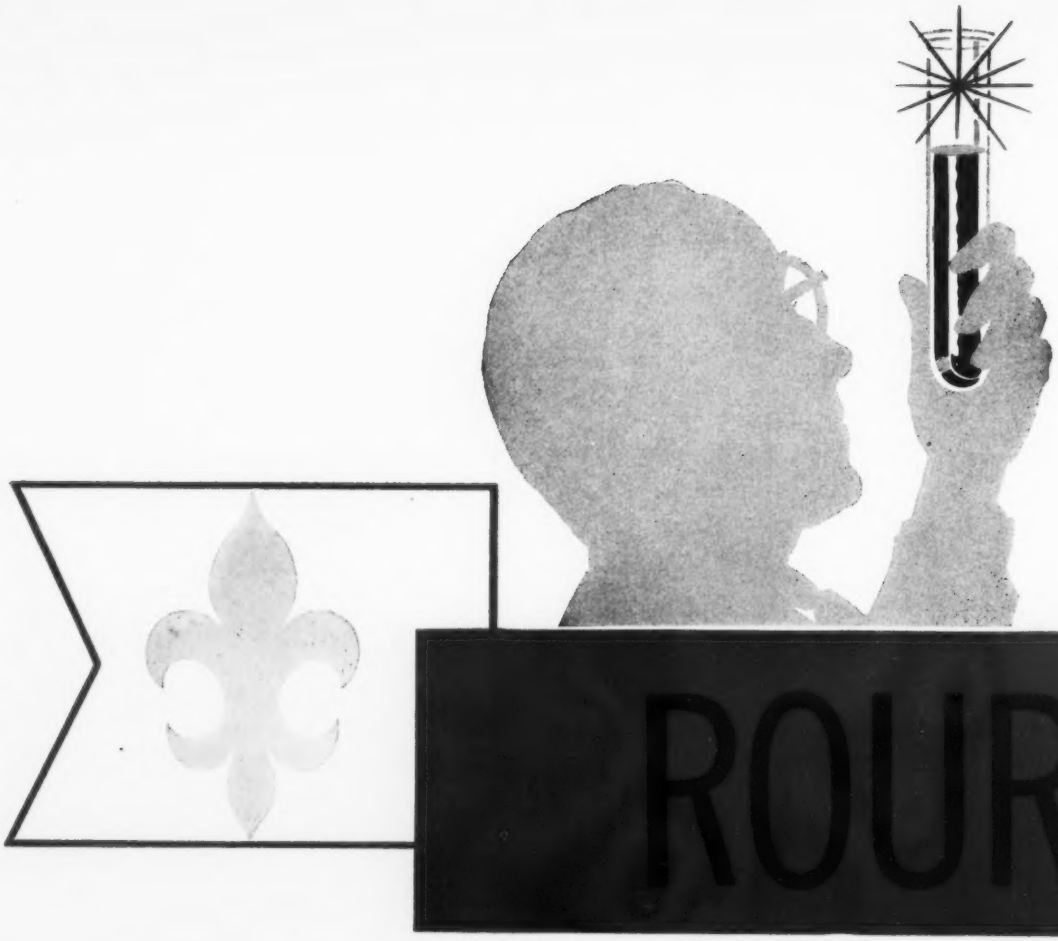

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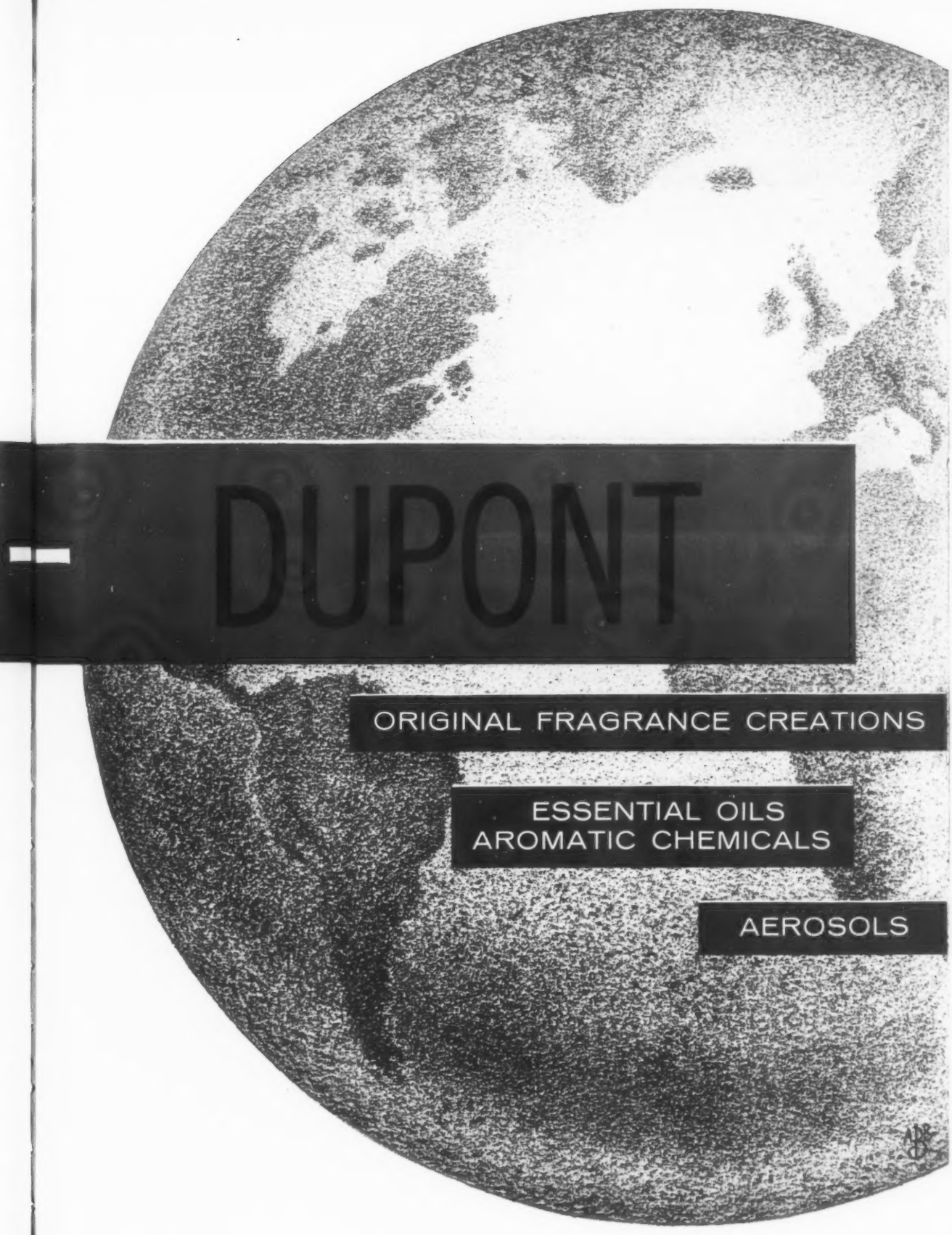
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ETHYLENE OX

Ethylene Oxide and Propylene Oxide provide a better way to separate oil and water

Millions of barrels of crude oil come to the surface in the form of annoyingly stable water-in-oil emulsions. Obviously, you'd never attempt to separate commercial quantities of oil from water with a simple laboratory centrifuge.

There's a better way . . . petroleum demulsifiers, formulated with ethylene oxide and propylene oxide, separate crude oil from water for a fraction of a cent per barrel. Most petroleum demulsifiers are mixtures of highly complex organic compounds. Ethylene oxide and propylene oxide are added to the basic demulsifier nucleus to achieve desired surface-active properties. The ratios of these oxides are varied to adjust the hydrophobe-hydrophile balance. The molecules are then modified to satisfy individual requirements.

Such custom building of molecules with ethylene oxide and propylene oxide is an established practice. For example, detergent manufacturers react fatty acids, fatty alcohols, fatty amines, and alkylated phenols with ethylene oxide to form polyoxyethylated derivatives which are employed as detergents, dispersants, stabilizers, and emulsifiers.

And propylene oxide finds extensive use in formulating polyether diols and triols for the growing polyurethane industry.

Jefferson is interested in any program involving these oxides . . . let our technical service people help you.

IDE and PROPYLENE OXIDE

ETHYLENE OXIDE

SPECIFICATIONS

Water, wt.%	0.03 max.
Aldehyde as acetaldehyde, wt.%	0.010 max.
Acidity as acetic, wt.%	0.002 max.
Non-volatile residue, gms./100 ml.	0.010 max.
Residual odor	None
Color	Water-white
Inorganic chloride as Cl	Nil
Acetylene	Nil

SELECT PROPERTIES

Boiling point, 760 mm.	10.73°C.
Explosive limits in air by volume	3-100%
Flash point (open cup)	<0°F.
Specific gravity, 20/20°C.	0.8711
Specific heat (liquid)	0.44 cal./gm./°C.
Weight, 20°C	7.25 lbs./gal.

PROPYLENE OXIDE

SPECIFICATIONS

Specific gravity, 20/20°C.	0.829 min. 0.831 max.
Acidity as acetic, wt.%	0.005 max.
Water, wt.%	0.10 max.
Color, Pt-Co scale	10 max.
Residual odor	None
Aldehyde as propionaldehyde, wt.%	0.05 max.
Boiling range, ASTM, °C.	33.0-37.0

SELECT PROPERTIES

Boiling point, 760 mm.	34.1°C.
Explosive limits in air by volume	2.1-38.5%
Flash point (open cup)	—35°F.
Specific gravity, 20/20°C.	0.8305
Specific heat (liquid)	0.51 cal./gm./°C.
Weight, 20°C.	6.92 lbs./gal.

SHIPPING AND HANDLING

Ethylene oxide and propylene oxide are available from Jefferson in 10,000-, 6,000-, and 4,000-gal. tank cars (I.C.C. Spec. 105-A-100-W) and E. O. in 400-lb. net drums (I.C.C. Spec. 5P), P. O. in 370-lb. net drums (I.C.C. Spec. 17C) . . . red labels required.

Both ethylene oxide and propylene oxide represent a potential hazard in handling and storage. All equipment including piping, storage tanks and relief valves used in the handling of these oxides should be of carbon steel or stainless steel and with a minimum working pressure of 50 psig. Complete methods of handling and precautionary measures are available from our technical service people . . . let them assist you in any phase of your oxide program.

TECHNICAL INFORMATION

For detailed specifications, applications, storage, handling and bibliography on ethylene oxide and propylene oxide, request the respective Technical Brochures. Also, comprehensive literature surveys on these two oxides are yours for the asking . . . Jefferson Chemical Company, Inc., 1121 Walker Avenue, P. O. Box 303, Houston 1, Texas.

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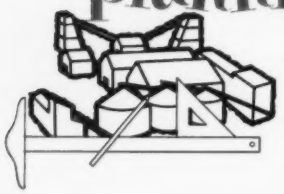
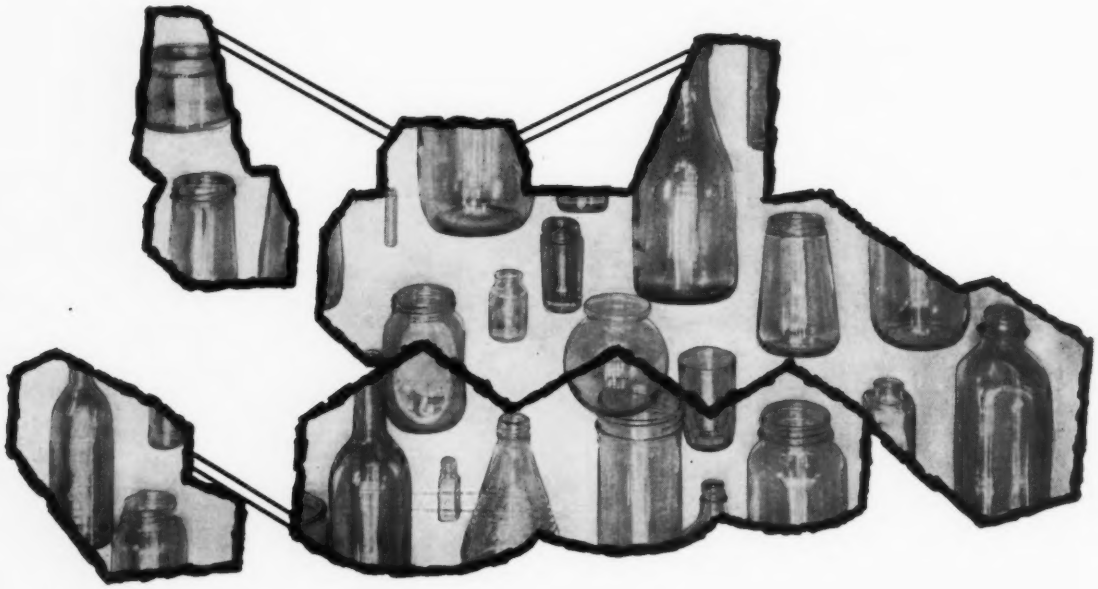


OF MULTIPLE SODA ASH SOURCES ANTICIPATES INDUSTRY'S GROWING NEEDS



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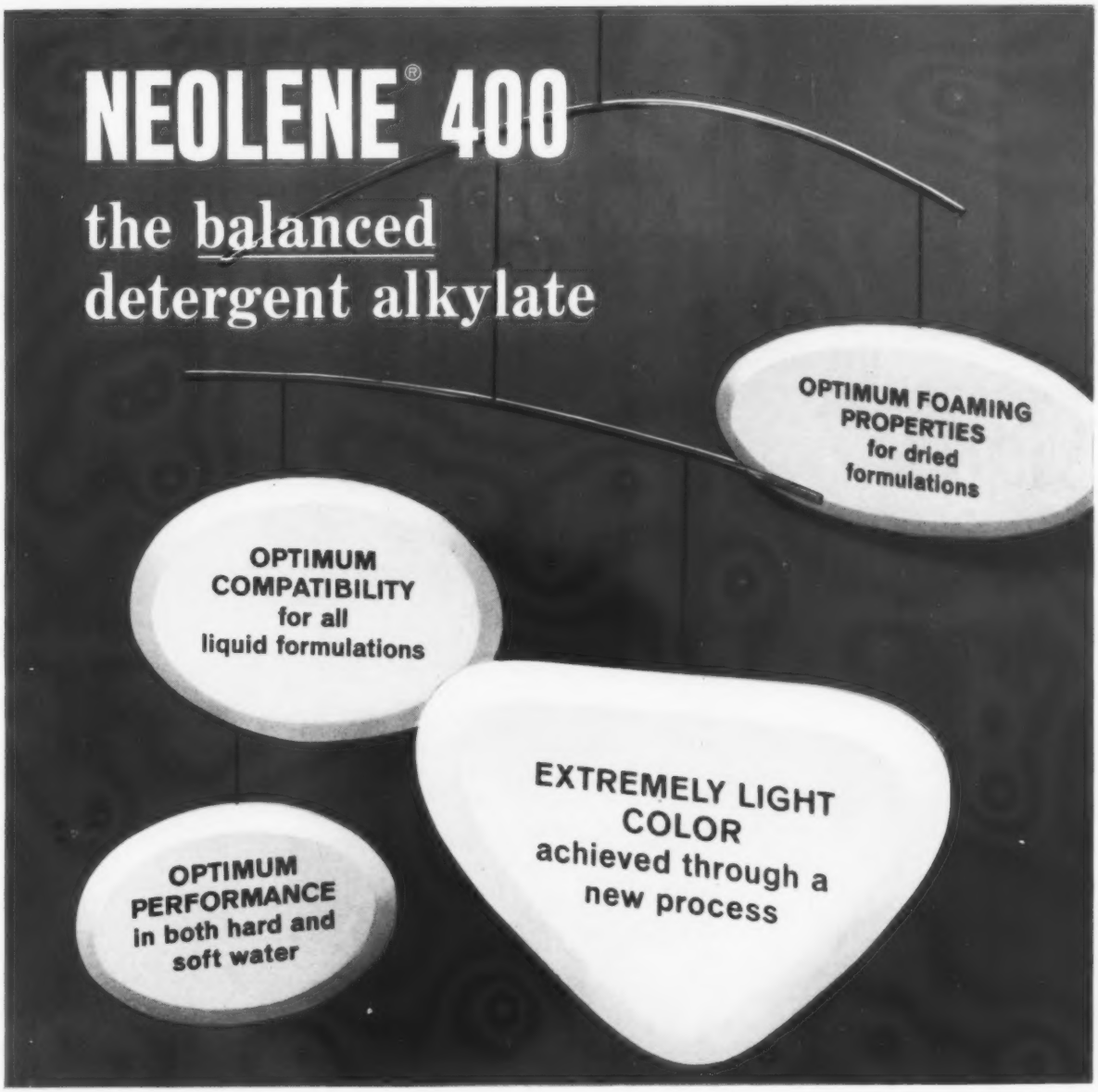
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Purity (vol per cent) min	99.9
Water Content (wt per cent) max	0.1
Specific Gravity (20/20°C) max	0.7911
Specific Gravity (60/60°F) max	0.7942
Acidity, as acetic acid (wt per cent) max	0.002
Color (Pt-Co) max	10
Non-volatile Matter (mg/100 ml) max	2.0
Distillation (°C)	
Initial min	77.5
Dry Point max	79.0
Permanganate Time (minutes) min	25
Residual Odor	Nil
Water Solubility	Clear at Infinite Dilution
Appearance	Clear and Free of Suspended Matter

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PRODUCT	USE ASPECTS	APPLICATIONS
DODECYL BENZENE SULFONIC ACID (Surco DDBSA)	Ammonia or diethanolamine neutralization. Dry Soda Ash-Sodium Tripolyphosphate neutralization	Kerosene degreaser and cleaner • Floor cleaner-coupling agent. Low cost car shampoos. Pourable gel concentrate
AMMONIUM NONYL PHENOXYETHYLENE SULFATE (Surco 57)	Auxiliary foamer and detergent in liquid preparations	Dish detergents • car shampoos
DESALTED SODIUM ALKYL ARYL SULFONATE (Surco SF42M)	Contains minimum salt in ethyl alcohol solution	Glass rinses • Liquid dish detergents • General synthetic cleaner • Oven, exhaust fan, deep fry cleaner • Clarifying agent for ammonium alkyl aryl sulfonate solutions
LAURIC DIETHANOLAMIDE (Surco Stabilizer #2)	Standard foam stabilizer and thickener	Low cost shampoos or bubble baths • Liquid dish detergents • Lotion-type shampoo concentrates
COCONUT DIETHANOLAMIDE (Surco Coconut Condensate)	Predominantly non-ionic. Effective with cationics	Base material in high-active floor cleaner concentrates • Glass cleaner and rinse • Thickener
MIXED FATTY ACID DIETHANOLAMIDE CONDENSATE (Surfact-Co MA)	Can formulate without added coupling agent. Hard water resistance • Copious but unstable foam for rinsing ease in suggested formulations	General purpose cleaners • Wax strippers • High viscosity germicidal cleaners • High viscosity synthetic soap cleaners • Lotion-type floor cleaners
LAURYL SULFATES (Surco SLS, Surco AM-LS)	Derived from high lauryl content alcohol. Improved foaming and detergency	Rug and upholstery shampoos • Hair shampoos, clear and lotionized.
SURCO HDL BASE	Can be formulated with large quantities of Tetrapotassium Pyrophosphate for heavy-duty liquid detergents	Laundry detergent • dish detergent

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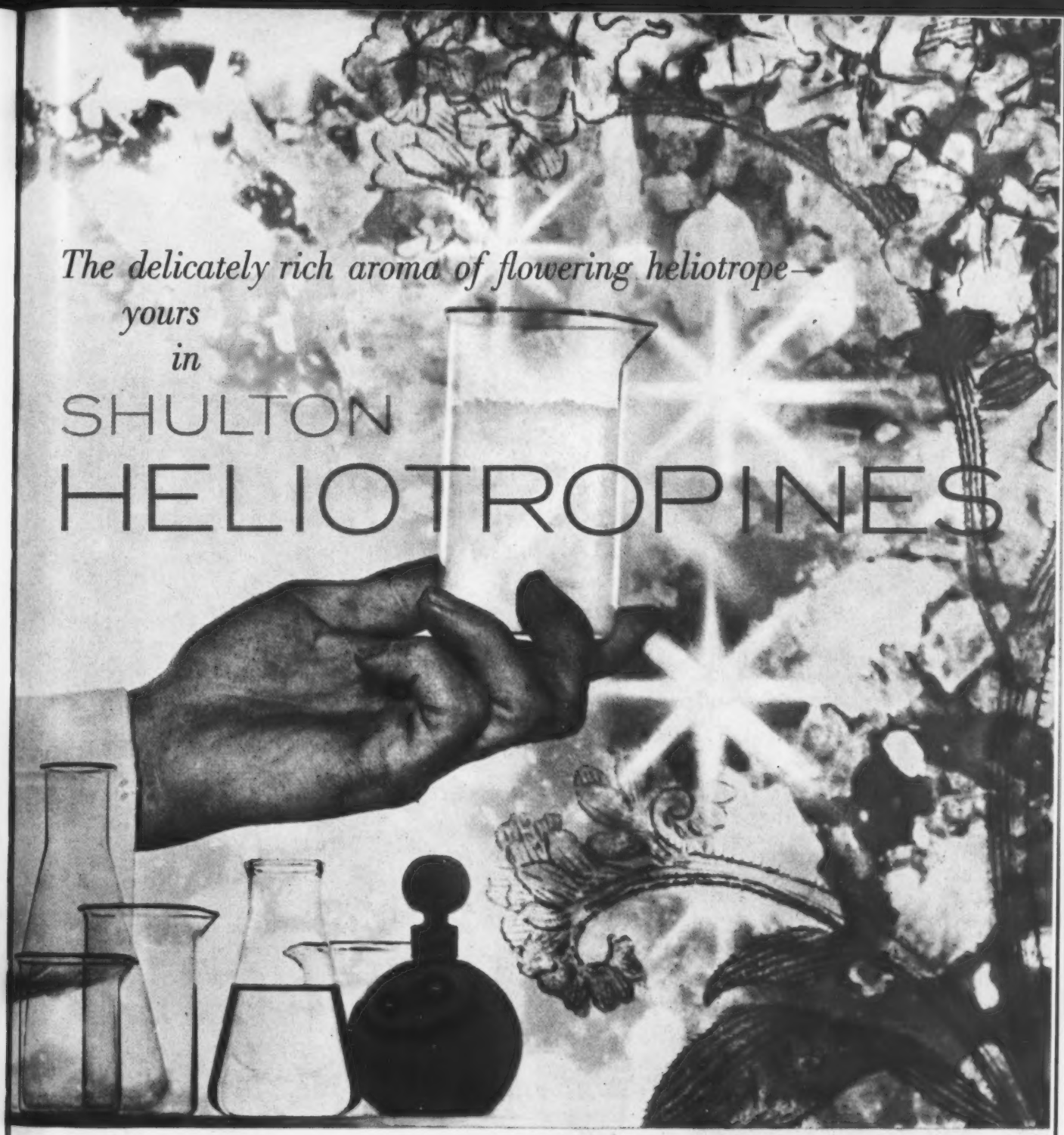

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With facilities ranging from the most complex analytical apparatus to home appliances and industrial processing equipment, they can approach every problem from both the theoretical and practical viewpoints. They can tell you not only **when** your product works well but **why.**

These modern laboratories and experienced staffs are always at your service. When you have a problem, let FMC be the call-letters you use first for assistance.

SODIUM PHOSPHATES Hexaphos® Fosfodril® Sodaphos® (Brands of Sodium Glassy Phosphate) Disodium Phosphate Trisodium Phosphate Monohydrate Trisodium Phosphate Hemihydrate Monosodium Phosphate Trisodium Phosphate Anhydrous Sodium Acid Pyrophosphate Sodium Tripolyphosphate Tetrasodium Pyrophosphate Tetrasodium Pyrophosphate Crystals
POTASSIUM PHOSPHATES Dipotassium Phosphate Potassium Tripolyphosphate Monopotassium Phosphate Tripotassium Phosphate Tetrapotassium Pyrophosphate
PHOSPHORIC ACID 75% and 80% Food and Commercial Grades 85% N. F.

fmc
FOOD MACHINERY AND CHEMICAL CORPORATION

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
Mineral Products Division
General Sales Offices:
161 E. 42nd STREET, NEW YORK 17

THE FRAGRANCE OF GARDENIA....

AS THE SKILLED PERFUMER SEES IT....

Shown above, broken down into its twenty-six component parts, are the constituents that comprise one of FRITZSCHE'S very successful gardenia specialties. For the record, this is Compound No. 35328. Its parts may be identified by reference to the numbered diagram on the back of this insert. The true complexity, however, of the perfumer's task in composing this fragrance cannot be shown. Obviously involved—as the formulation progresses—are the time-acquired requisites of experience and skill in the blending and balancing of these ingredients, one against the other, in proportions measured by the perfumer's own sensitivity, discrimination and finesse. Obvious, also, is the conclusion that the fragrance creation's finished quality and stability depend not only upon the perfumer's mastery of materials, but upon the absolute uniformity and dependability of every ingredient chosen for his formulation. It is upon such reliability of materials that FRITZSCHE'S ninety-year record of service is founded.

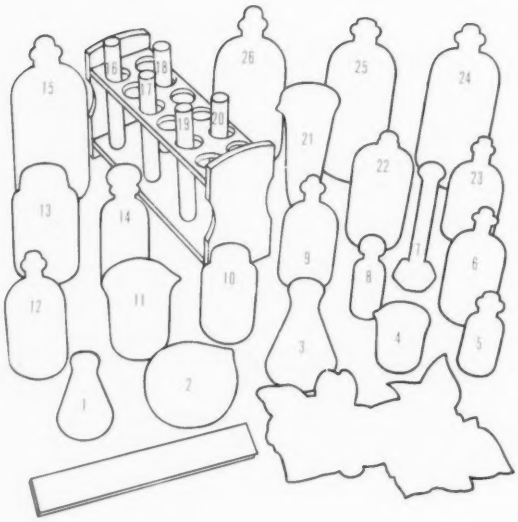
SEE OVER

FRITZSCHE

OUR 90th AND GREATEST YEAR!

1871... ...1961

KEY TO PHOTO *(on facing page)* . . . .



1. **ABSOLUTE CASSIE COMPOSITE F-187**—F.B. specialty.
2. **METHYL NAPTHYL KETONE**—Commercially available synthetic.
3. **GUAIENE**—Clifton produced synthetic.
4. **FLORA No. 32076**—F.B. specialty.
5. **PHENYL ACETALDEHYDE DIMETHYL ACETAL**—Commercially available synthetic.
6. **TINCTURE CIVET F.B.**—Our own production; Clifton process.
7. **10% Solution METHYL HEPTINE CARBONATE IN ALCOHOL**—Commercially available synthetic.
8. **PHENYLETHYL ALCOHOL N.F.**—Commercially available synthetic.
9. **HYDROXY-CITRONELLAL EXTRA**—Clifton produced synthetic.
10. **VANILLIN USP FROM LIGNIN**—Commercially available synthetic.
11. **GERANIOL EXTRA**—Isolated by Clifton process.
12. **ALCOHOL C-10**—Clifton produced synthetic.
13. **HELIOTROPIN EXTRA**—Exclusive source of supply.
14. **PHENYLPROPYL ALCOHOL**—Clifton produced synthetic.
15. **OIL BOIS DE ROSE**—Exclusive source of supply.
16. **10% Solution ALDEHYDE C-10 IN ALCOHOL**—Commercially available synthetic.
17. **d-CARVONE**—Isolated by Clifton process.
18. **STYROLYL PROPIONATE**—Clifton produced synthetic.
19. **STYROLYL ACETATE**—Clifton produced synthetic.
20. **TERPINEOL ABSOLUTE**—Isolated by Clifton process.
21. **NOVOVIOL METHYL**—F.B. specialty.
22. **CINNAMIC ALCOHOL**—Clifton produced synthetic.
23. **TINCTURE MUSK TONQUIN ARTIFICIAL F.B.**—F.B. specialty.
24. **FRITZBRO® SYNTHETIC FLOWER OIL TUBEROSE**—F.B. specialty.
25. **OIL BERGAMOT RECONSTITUTED F.B.**—F.B. specialty.
26. **OIL PETITGRAIN TERPENELESS**—Exclusive source of supply and special processing.

YOU PAY NO MORE FOR THESE ADVANTAGES....

THESE FRITZSCHE PERFUME MATERIALS are priced competitively, yet because of our facilities and the rigid control procedures to which each is subjected at every stage of production, they offer measures of uniformity and dependability that few suppliers can match. They are the manufacturer's assurance that perfume formulations made from these reliably consistent materials will never vary in quality or fragrance from one lot to the next. Thus, without added cost, you can insure the constant high quality of your most successful products by availing yourself of these important values which are a PART of each FRITZSCHE product, APART from its price. May we consult with or quote you on your fragrance needs?

FRITZSCHE BROTHERS, Inc.

76 NINTH AVENUE NEW YORK 11, N. Y.

Branch Offices and *Stocks: Atlanta, Ga., Boston, Mass., *Chicago, Ill., Cincinnati, Ohio, Greensboro, N. C., *Los Angeles, Cal., Philadelphia, Pa., San Francisco, Cal., St. Louis, Mo., Montreal and *Toronto, Canada; *Mexico, D. F. and *Buenos Aires, Argentina. **Plants:** Clifton, N. J. and Buenos Aires, Argentina.

MANUFACTURERS AND SUPPLIERS OF ESSENTIAL OILS, AROMATIC CHEMICALS, BASIC PERFUME AND FLAVOR RAW MATERIALS

AFTER CLOSING---

Harding Joins Sterwin

Carroll W. Harding, Jr., has been appointed assistant manager of the sanitary supply division, Sterwin Chemicals, Inc., New York, it was announced recently.

Carroll W. Harding, Jr.

Mr. Harding, who has specialized in the field of industrial and institutional cleansing, was formerly associated with the farm chemical and insecticides division of S. B. Penick & Co., New York. Prior to that he was with Economics Laboratory, Inc., St. Paul, Minn., and Oakite Products, Inc., New York.

—★—

Delay CSMA Compilation

A delay of a month in shipment of copies of the new "Compilation of Economic Poisons (Pesticides) Laws" by the Chemical Specialities Manufacturers Association has been announced by the Association. The addition of recently adopted laws and regulations is primarily responsible for the delay in shipment of ordered copies. Final closing of the compilation was held up so that this latest information could be included. Shipment of ordered copies will probably be made late in August or early in September.

Copies of the new compilation will be available to non-members of CSMA at $48 per copy in the United States and $49 elsewhere. The new edition is in loose-leaf style, 8½ x 11, with a heavy duty leatherette binder, equipped with dividers and index tabs. It runs about 500 pages. This latest compilation of laws and regulations has been edited under the direction of John D. Conner and Robert L. Ackerly, CSMA counsel, and brings together in one volume all laws and regulations both state and Federal of interest to manufacturers, packers and marketers of insecticides, rodenticides, disinfectants, fungicides, sanitizers and numerous other related chemical products. Further information may be obtained from A. A. Mulliken, secretary of CSMA, 50 East 41st St., New York, 17.

—★—

Fuld Expands

Fuld Brothers, Inc., Baltimore, Md., has acquired a building adjacent to its present manufacturing site, it was announced recently. The additional facilities will house kettles and related equipment doubling the processing area for the preparation of maintenance products manufactured by the firm.

Melvin Fuld, chairman of the board, noted that if demand continues at its present pace, still additional production facilities will be necessary within a few years.

—★—

CMCS Golf Tournament

The second annual golf tournament of the Canadian Manufacturers of Chemical Specialties Association will be held September 12th at the Highland Golf Club, Aurora, Ont. The tournament is open to all association members and two guests per CMCS member representative attending the outing. A trophy will be presented to the low-gross player, and a dinner will be held after the tournament.

Armour Appoints Lawton

H. S. Lawton has been appointed director of marketing for Armour Industrial Chemical Co., Chicago, it was announced recently. Mr. Lawton directs and coordinates sales, market development, advertising, market research and commercial development.

H. S. Lawton

He joined Armour in 1959 as director of commercial development. Prior to that he was vice-president of sales and development for Michigan Chemical Corp., St. Louis.

—★—

Simoniz Names Kocour

Max G. Kocour has been appointed director of advertising for Simoniz Co., Chicago, it was announced recently. He was formerly associated with Young & Rubicam, Inc., New York.

—★—

New Washburn Line

T. F. Washburn Co., Chicago, recently introduced its "Polymax" line of emulsion polymer raw materials for floor polish formulators and manufacturers. The emulsions, including polystyrene, styrene-acrylic, acrylic, terpolymer, and polyethylene, are said to feature advances in foam suppression, color and gloss, and hardness and flexibility.

V. H. Fischer Retires

Valentine H. Fischer, vice-president of Dodge & Olcott, Inc., New York, has retired after 44

Valentine H. Fischer

years of service with the company. Mr. Fischer started with the firm in 1917, as an assistant in the customs house department.

—★—

New Fuld Floor Finish

"Glo-Zip" scrubbable floor finish, recently introduced by Fuld Brothers, Inc., Baltimore, Md., is a water emulsion acrylic polymer that will not wash off with soaps, detergents or conventional strippers, the company states. Surfaces protected by the "Glo-Zip" film are said to be impervious to spotting, dulling, or damage by water, soap, detergents and other commerical cleaning agents. The finish is removed with a "Special" remover marketed by Fuld. "Glo-Zip" is available in 55, 30 and five gallon drums, and in one gallon cans. The "Special" remover is available in 55, 30 and five gallon drums, and in one gallon bottles.

—★—

Forms Soap Company

The bulk soap business of Fitzpatrick Brothers, Inc., Chicago, has been purchased by Chicago Sanitary Products Co., and will be operated as a wholly-owned subsidiary of that firm, it was announced recently. The industrial, laundry and bulk soap divisions acquired by Chicago has been named Amity Chemical Co.

The new subsidiary will continue to supply bulk soap to laundries, other manufacturers of soap products, and institutions including hotels and hospitals, throughout the midwest. Amity will be headquartered in the parent-firm's main offices and plant in Chicago.

Founded in 1925, Chicago Sanitary Products Co. manufactures a variety of soap products including flakes, powdered, bar, liquid and paste soaps, as well as industrial cleaners, detergents, and chemical specialties sold for industrial, institutional, laundry and manufacturing use.

—★—

Leeben Acquires Firm

Leeben Color and Chemical Co., New York, has just announced the acquisition of Fezandie & Sperrle, Inc., New York importers and blenders of dyes and colors.

Fezandie & Sperrle, whose staff and facilities have been consolidated with Leeben's, will operate as a separate division of the company at 103 Lafayette St., New York. They offer all types of pigments, oxides, lakes and toners for various uses, including coloring for insecticides, soap and cosmetics.

In the future Fezandie & Sperrle will also handle the certified colors and Leeben will handle the oxides, lakes and toners in addition to their regular line.

—★—

White King Name Change

White King Soap Co., 617 E. First St., Los Angeles, has changed its name to White King, Inc., effective July 1, it was announced recently by Andrew K. Forthmann, president.

The name change was said to emphasize pending diversification into products other than those of soap. No indication was given as to what the new products would be. White King, Inc., is a wholly-owned subsidiary of the 101 year old Los Angeles Soap Co., manufacturer of all White King products. Mr. Forthmann, president of both companies is a grandson of the founder.

Stearns Joins Emson

Carl Stearns has been named head of the engineering department of Emson Research,

Carl Stearns

Bridgeport, Conn., it was announced recently. He was formerly associated with the product research and development department of Lederle Laboratory, Pearl River, N. Y., a division of American Cyanamid Co.

Mr. Stearns has had several papers published, including "Pharmaceutical Filling of Aerosol Containers." He has been assigned patents on machines and formulation developments, and is said to be well acquainted with fillers and filling operations.

—★—

Consolidates Territories

The Pine and Paper Chemicals Department of Hercules Powder Co., Wilmington, Del., recently announced the consolidation of the southeastern and southwestern states, paper chemicals sales territories with headquarters in Atlanta, Ga. The New Orleans office, formerly responsible for paper chemical sales in four states, will be closed effective September 1.

W. E. Hamilton, district sales manager of that office, moves to Atlanta as assistant district sales manager of the new 11 state territory. D. D. Cameron, formerly Atlanta district sales manager, is district sales manager of the expanded territory.

Soap and Waterproof Floor Polishes

FLOOR polishes which can be cleaned with aqueous soap or detergent solutions but are readily removable with a mildly acid remover have become feasible by the emergence of polymers modified to be alkali resistant and acid soluble. Both Morton Chemical Co., Chicago, and Polyvinyl Chemicals, Inc., Peabody, Mass. have announced availability of acid soluble polymer emulsions. Other companies are reportedly close to introducing similar products.

In addition to ensuring alkali and water resistance these modified polymers permit immediate recoating of a floor film without damaging the first coat. This procedure yields very high gloss even on worn floors, normally requiring several coatings for acceptable appearance, according to the manufacturers of the new materials.

Polyvinyl is currently offering two acrylic copolymer emulsions of the modified type: "Neo-Cryl A-400," which is acid dispersible and "Neo-Cryl A-410" which is acid-soluble. Both come as light, translucent emulsions with 40 per cent solids content, particle size ranging from 0.02 to 0.04 microns, and weighing 8.8 pounds per gallon. Both are formulated — as are conventional polymers — by blending with wax emulsions and alkali soluble resin solutions.

Principal difference between the two "Neo-Cryls" is the type of of mild acids, (such as phosphoric, lactic or citric), wetting agents (such as "Igepal CO-730" by Antare), and water miscible solvents will remove or strip polish films based upon the acid dispersible A-400. Solutions of mild acids and wetting agents will remove polishes formulated with acid dispersible A-410.

Morton has trade-named its new acid soluble acrylic polymer "Lock & Key" latex. Like Polyvinyl's products, "Lock & Key" is claimed to combine the advantages of alkali and water stability with acid solubility and immediate recoatability. Like the "Neo-Cryls," it is said to excel also in the other performance properties expected of a modern polish ingredient.

Solids content, particle size and other essential properties of "Lock & Key" closely resemble those of the "Neo-Cryls." Liquid polish formulations incorporating either of these products would be made up of about 85 parts polymer emulsion, five to 15 parts wax emulsion, five to 10 parts alkali soluble resin solution, two parts tributoxyethyl phosphate and one part of a one per cent solution FC134 fluorocarbon as a leveling aid.

For a more buffable polish the polymer emulsion would be cut to 55 to 65 parts and the wax emulsion correspondingly increased to 25 to 35 parts. Partial use of hard waxes is suggested for the buffable formulations. For best results nonionic or cationic wax emulsions are preferable, according to Polyvinyl.

Both the Morton and the Polyvinyl polymers are compatible with the alkali soluble resins commonly used in self polishing floor polishes, including "Shanco 334" (Shanco Plastics & Chemicals Inc.), "Durez 19788" (Durez Plastics Division) shellac and other. Polishes are made by conventional methods.

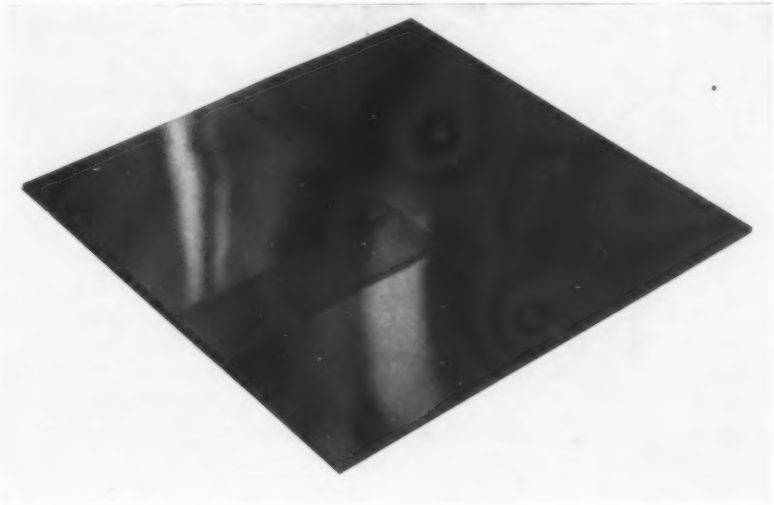
A liquid remover concentrate for acid despersible floor polish may contain four parts of a water miscible solvent, e.g. a glycol ether such as hexyl "Carbitol" (Union Carbide), one part of citric, lactic, acetic or phosphoric acid, and two parts of a wetting agent which might be "Igepal CO-730" or "Duomeen O" (Armour). In a dilution of one part remover in 20 parts of hot water this solution is applied to the floor just like conventional polish removers.

Acid soluble films can be removed by either solid or liquid strippers incorporating one part of wetting agent and five parts of mild acid. Use dilution is the same as above.

First target of the alkali stable polymer producers is the floor polish industry. Reportedly Simoniz Co., Chicago, will begin to market in the immediate future a polish incorporating such a polymer. Others are said to be almost ready with similar floor care products, which will be offered to household and industrial consumers.

Both Morton and Polyvinyl

Left hand side of vinyl floor tile in photo was coated with new "Lock & Key" polish; right side was coated with "standard polish." Dilute acid stripper was used on dull area on left and continued across adjacent area covered with standard polish. Dull area on right hand side of tile and adjacent area on left were treated with standard detergent and water.



envisage applications in the leather polish, textile, adhesives, paper, and other fields. Morton sees potential uses also in terrazzo and tile sealers, carpet and rug backings, metal primers and coatings and a number of other products.

—★—

New Bactericidal Agent

Fine Organics, Inc., Lodi, N. J., recently announced the commercial availability of "Dibactol," a new bactericidal agent with a reported tolerance of hard water exceeding 600 ppm hardness.

"Dibactol," a specially formulated dimethyl benzyl higher alkyl ammonium chloride, is supplied as a 100 per cent active, free-flowing, white crystalline powder, suitable for tableting and dry blending. The new product is also said to be suitable for liquid formulations, being freely soluble in water and alcohol.

—★—

Alpine Appoints Salyerds

Alpine Aromatics, Inc., Metuchen, N. J., recently announced the appointment of R. J. Salyerds as sales manager and technical representative for the Eastern section of the United States.

Prior to joining Alpine, Mr. Salyerds was a vice-president of Harwic Standard Chemical Co., Trenton, N. J. He was previously associated with the Goodyear Tire & Rubber Co., Akron, O., in their research and development division and in rubber compounding.

R. J. Salyerds

Harry C. Rosenberger Dies

Harry C. Rosenberger, 82, formerly president of National Milling & Chemical Co., Philadelphia, died July 16, at the University of Pennsylvania Hospital, Philadelphia. Mr. Rosenberger, associated with the company for more than fifty years, retired from active participation in the firm last year. He was succeeded as president of NAMICO by his nephew Lester M. Rosenberger, whose grandfather was the founder of the company.

—★—

Rickard Represents Meer

Ken Rickard has been appointed west coast sales representative for Meer Corp., New York gums and botanicals importer and processor. He will be headquartered in Meer's west coast office at 71 East Algeria Ave., Sierra Madre, Calif.

Prior to joining Meer he was associated with International Flavors & Fragrances, Inc., and Dodge & Olcott Co., both of New York.

—★—

Hercules Appoints Six

Hercules Powder Co., Wilmington, Del., recently announced six managerial and supervisory appointments in plastics sales of its Polymers Department. The appointments are:

Emmett E. Hixon, manager, plastics sales; Robert C. Clark, product manager of "Hi-fax" high density polyethylene; Robert D. Ullrich, product manager of "Pro-fax" polypropylene; George M. Taylor, product supervisor of "Penton" chlorinated polyether; William O. Bracken, supervisor, market development; and Russell D. Hanna, supervisor, technical service.

—★—

Rozilda Labs Moves

Rozilda Laboratories, Inc., has moved to new and greatly expanded quarters at 812-814 Madison St., Hoboken, N. J., it was announced early this month by Glenn P. Roddy, president. The firm, which specializes in the manufacture of synthetic detergents and surfactant materials, was formerly located at 44-18 Purves St., Long Island City, N. Y. In addition to shampoo detergent bases and surfactants, including wetting agents, Rozilda also produces emulsifiers.

—★—

New Dema Representative

Dema Engineering Co., St. Louis, recently appointed R. D. De Rosier Co., Dallas, Tex., to represent their complete line of automatic dispensing devices in Colorado, Arkansas, Kansas, Oklahoma, Louisiana, New Mexico and Texas.

—★—

Texize Notes Record Sales

Texize Chemicals, Inc. Greenville, S. C., reported gross sales for the first six months of the 1961 fiscal year, which ended April 30, were $9,015,289, as compared with $6,767,130 for the corresponding period in 1960. This represents a 33.2 per cent increase. Net profits after taxes for the period had risen to $22,505 from a loss of $187,184 for the same period in 1960.

—★—

Wishnick Sonneborn Pres.

William Wishnick has been elected president and chief executive officer of Sonneborn Chemical and Refining Corp., division of Witco Chemical Co., New York, it was announced recently. He succeeds Rudolf G. Sonneborn who has been elected chairman of the board for the division.

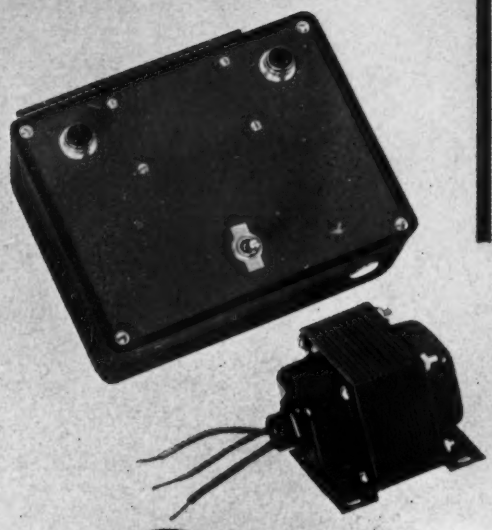
Mr. Wishnick continues as executive vice-president and a director of Witco, it was also announced.

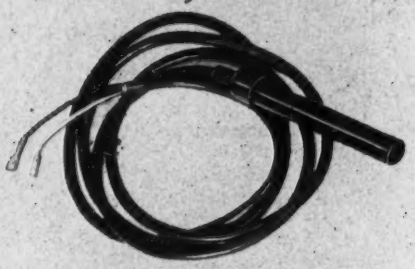
William Wishnick

The big difference is often made by the smallest difference. The big difference in sales, in customer loyalty, in consistent performance. Creating fragrance is a business of small differences. Two "lilacs" do not smell alike. Yet both are unmistakably "lilac". That immeasurable, indefinable difference is the difference between product success and product failure. That sales-compelling difference is the difference to which Felton devotes its caree a difference achieved through upwards of thirty-eight years of perfume c experience. Send for the man from Felton. Let him help you give yo product the little difference that makes all the difference in brand loyal Felton Chemical Company, Inc., 599 Johnson Avenue, Brooklyn 37, New Yo

Felton

NEW DESIGNS FOR DISHWASHING





Model DC100 Detergent Control

Automatically controls amount of detergent fed into a dishwashing machine. Simplified electrical circuit of sturdy components, coupled with a conductivity cell, responds to conductivity of wash solution which varies with detergent concentration. Green lamp indicates "power on"; red lamp signals need for more detergent. Three-part unit consists of: control head; transformer, and dip-type conductivity cell.

DEMA INTRODUCES A COMPLETE LINE OF LIQUID FEEDERS AND INJECTORS

Four new mechanical dishwashing accessories: *On the left* . . . Dema's new Electric Controller; *on the right* . . . Dema's new proportional Rinse Injector; *below* . . . two new Liquid Dishmachine Detergent Feeders.

Each has an important place in today's mechanized kitchen . . . each is promotionally priced and engineered for easy installation.

Give your liquid dishwasher chemical sales a *Dema injection* today. Write for full information.

DEMA ENGINEERING COMPANY

Designers and Manufacturers of Automatic Dispensing Devices

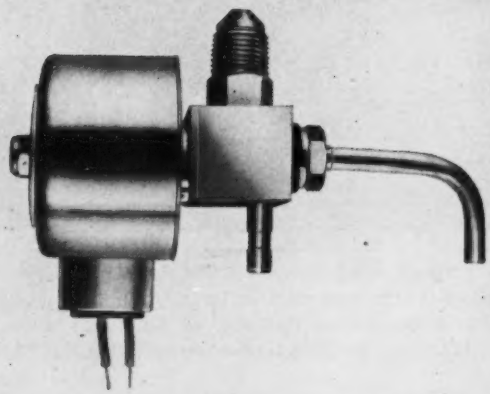
10020 Big Bend Blvd., St. Louis 22, Mo.

Model 224 Rinse Injector

Injects accurately metered amounts of rinse additive in direct proportion to the flow of water — not at a fixed rate. Has no electric wiring or moving parts . . . installs on either side of rinse valve . . . flow meter shows injection rate. Operates dependably on high or low water pressure. A two-stage venturi is utilized for positive injection. Additive supply is easily replenished while machine is functioning. Bottle holder adjustable for containers up to one quart in size.

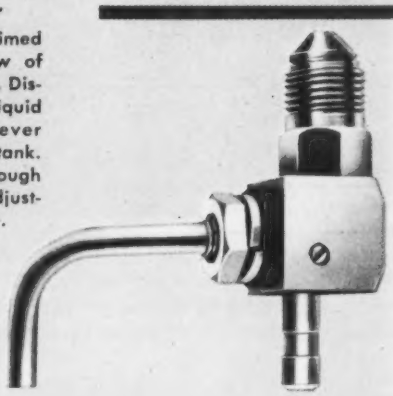
Model 219 Liquid Feeder

Dispenses liquid dishmachine detergent from any size bulk container through polyvinyl tube and discharges directly into wash tank. Integral solenoid water valve, responsive to electric controller, controls admission of a small flow of water to actuate feeder. Mounts readily to side of dishwasher.



Model 217 Liquid Feeder

Automatic liquid controller, timed and actuated by a small flow of water bled from final rinse line. Dispenses a pre-set quantity of liquid dishmachine detergent whenever fresh water is added to wash tank. Connects to bulk container through polyvinyl tube. Feed rate is adjustable for any machine and cycle.



Now Cyanamid Offers a Series of Cyquest* Sequestering Agents

to help remove traces of unwanted metallic ions—Check this chart... there's a Cyquest Sequestering Agent best for you

Sequestering Agent	Chemical Composition	Use
CYQUEST 40*	Tetrasodium ethylenediamine tetraacetate solution	General purpose sequestering agent for most metallic ions throughout the pH range; effective for iron in the acid pH range.
CYQUEST* 40-D	Tetrasodium ethylenediamine tetraacetate dihydrate	Used in place of Cyquest 40 when a dry form is needed.
CYQUEST* ACID	Ethylenediamine tetraacetic acid	Used in place of Cyquest 40 when the sodium ions are undesirable.
CYQUEST* 30-HE	Trisodium N-hydroxyethyl-ethylenediaminetriacetate solution	For control of iron in the alkaline ranges from pH 6.5 to 9.5.
CYQUEST* DEG	Sodium dihydroxyethyl glycinate	For iron control in alkaline range from pH 9.5 to 12.5.

*Trademark

CYANAMID

Cyanamid, with a wider series of sequestering agents, can now assist you better than ever in removing even traces of unwanted metallic ions from your product or process. All Cyquest Sequestering Agents are uniformly high in quality and provide maximum chelating activity. As with all chemicals from Cyanamid, you are assured of the finest in product, best in service and delivery. Why not send coupon today for more information?

AMERICAN CYANAMID COMPANY
Process Chemicals Department, 30 Rockefeller Plaza, New York 20, N. Y.

American Cyanamid Company SCSP-8
Process Chemicals Department
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Please send me product data sheets on
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Company _____
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Position _____

COLORLESSNESS *begins with Emery Oleic Acids*

To obtain a light color in any product, it is easier to start with white or colorless basic ingredients. It's costly and often impossible to remove color later. Emery gives you the colorless raw materials you need. — Emersol® 233 LL Oleic Acid and Emersol 221 Low Titer White Oleic Acid.

When you start with colorlessness, you can add as little or as much color as you wish. And the remarkable color stability of Emersol Oleic Acids, as assured by product specifications, minimizes color changes during processing and throughout shelf life. If the oleic acid you are now using cannot meet these specifications, why not let us send you samples that can, time after time? It costs you no more for this extra quality.

Write Dept. S-8 for samples or 20 page comprehensive booklet "Oleic Acid Emeryfacts."

COLOR SPECIFICATIONS	Maximum Color		Maximum Color Stability	
	Photo. Index	Lovibond 5¼" (Y/R)	Photo. Index	Lovibond 5¼" (Y/R)
Emersol 233 LL Oleic Acid	11/0.5	3/0.5	32/4.5	10/3
Emersol 221 Low Titer White Oleic Acid	15/0.5	5.0/0.5	51/10.5	20/7

A little extra everything except price

Emery

FATTY ACID DIVISION

Emery Industries, Inc., Carew Tower, Cincinnati 2, Ohio • Vopcolene Division, Los Angeles, Calif. • Emery Industries (Canada) Ltd., London, Ontario • Export Division, Cincinnati

Why Hooker STPP is 98% pure

We make our sodium tripolyphosphate from thermal acid. The result is a product that is 99.9% total complex phosphate, having sequestering value. There are only trace quantities of sulfate, nil on ortho and chloride. Compare this with any other brand of STPP you can find.

High density • Our regular granular STPP offers a compact 60 pounds per cubic foot . . . just right if you are formulating industrial detergents where storage space is at a premium and you want to hold shipping costs in line. It won't dust or cake and it flows freely.

Fast dissolving, spray dried • It's the tripoly in your detergent which determines how fast it will dissolve. Our spray-dried granular tripoly dissolves 2½ times faster than the regular granular material. That's because the hollow bead form offers more surface area for solution.

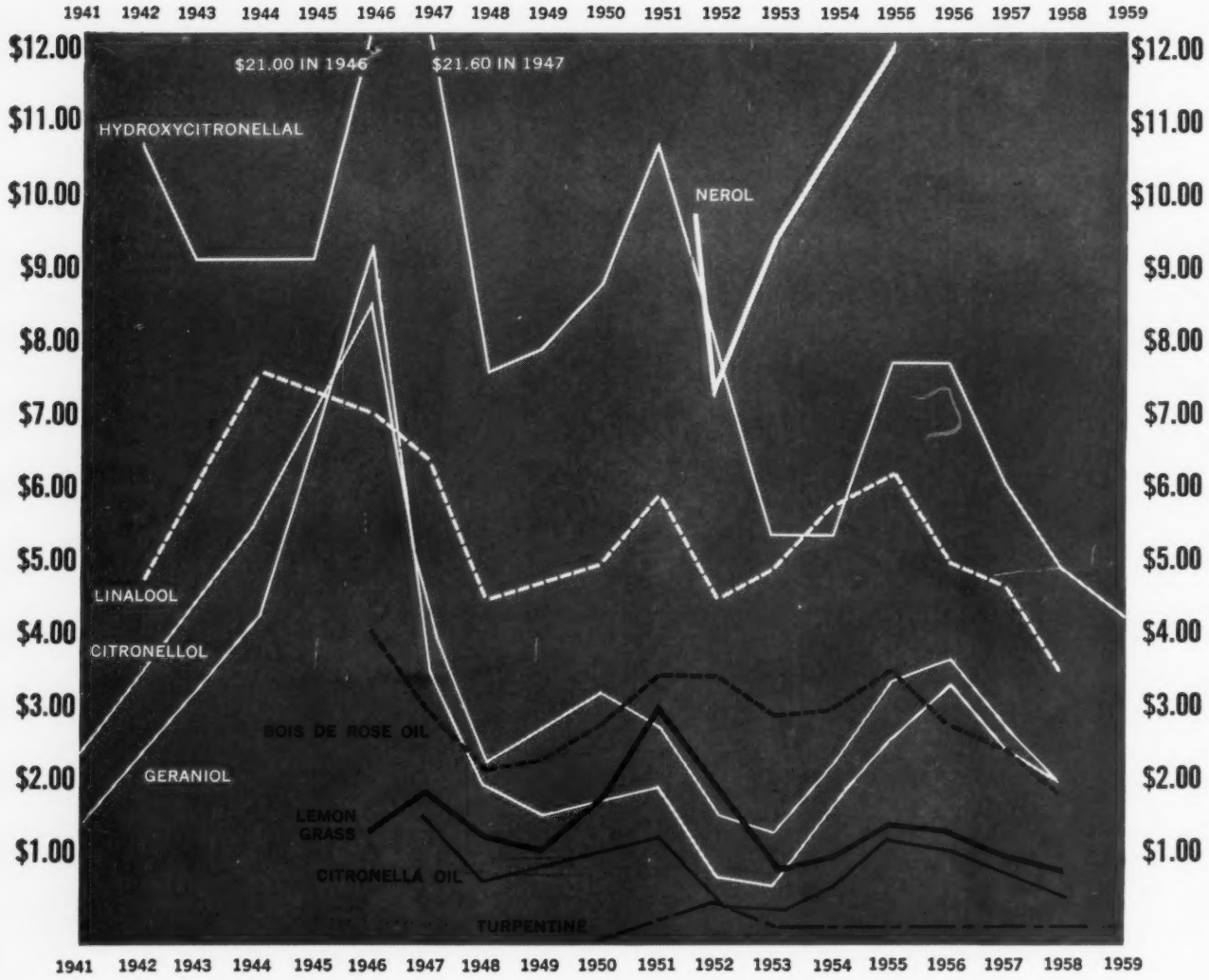
For complete data on both forms and any of these other Hooker phosphates—disodium phosphate, trisodium phosphate, sodium hexametaphosphate, tetrasodium pyrophosphate, and tetrapotassium pyrophosphate—please write the nearest Phosphorus Division office.

HOOKER CHEMICAL CORPORATION

PHOSPHORUS DIVISION, BOX 326, DEPT. SC-8, JEFFERSONVILLE, INDIANA

SALES OFFICES: CHICAGO, ILLINOIS • JEFFERSONVILLE, INDIANA • NEW YORK, N. Y.

HOOKER CHEMICALS PLASTICS



STABILIZE YOUR PERFUME COSTS

The historic unpredictability of perfume costs need no longer apply to your perfuming operations. No longer need you "worry" your perfume supplies, stretching them thin in certain products as costs suddenly cycle upwards, avoiding their use entirely in other marginal products.

The new Firmenich-Glidden Aromatics, derived from an abundant domestic source, make it possible for you to use the finest quality aromatics as freely as you wish, in any product you wish, with complete confidence that sudden changes in price, quality, and foreign supplies will not disrupt your manufacturing and marketing program.

The economic advantages provided by Firmenich-Glidden Aromatic Chemicals are perhaps best illustrated by reviewing the costs of these same aromatic chemicals as derived from natural sources. The figures demonstrate most forcibly the economic burden which the uncertainties of supply, compounded by natural and artificial restrictions, have placed upon the aromatics consuming industry.

Write for further information on these exceptional new aromatics. Ask for samples in the commercial quantities you need.

QUALITY Glidden PRODUCTS

Trademark of The Glidden Company

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ATLANTIC'S ULTRAWET® 35KX or KX FITS ANY CLEANING FORMULA

From all-purpose household cleaners to industrial metal cleaners—whatever your formulation need, you can depend on the consistent quality of Ultrawets 35KX or KX. These versatile alkyl aryl sulfonates, characterized by unusually low unreacted oil content and high quality performance levels, have proved themselves as a base for literally hundreds of detergent formulations used in both the home and industry. They can work effectively in your formulation, too.

Ultrawets 35KX and KX offer your particular formulation excellent solubility coupled with top performance. This includes these advantages: lack of odor, light color, superior foam, fast wetting and low surface tension.

Atlantic Ultrawet 35KX is a liquid; Ultrawet KX comes in flake form. They are both easy to handle, easy to store and economical to use. Ultrawet KX, a solid, offers some formulators exceptional money-saving shipping and handling benefits.

Atlantic sales engineers are graduate chemists or chemical engineers. They'll be glad to assist you by providing the latest technical information available for improving products or processes, in the development of new applications or devising ways to cut production costs. For more information, without obligation, write: Chemicals Division, The Atlantic Refining Company, 260 South Broad Street, Philadelphia 1, Pennsylvania.

Philadelphia • Providence • Charlotte
Chicago • Los Angeles

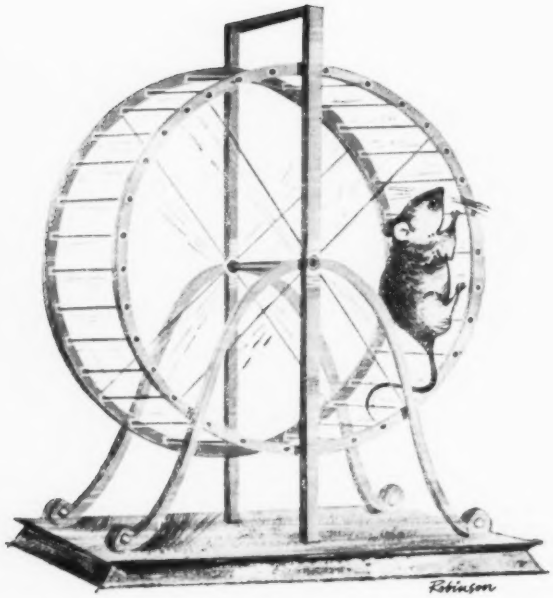
In Canada: Naugatuck Chemicals Division of Dominion Rubber Company, Ltd.

In Europe: Atlantic Chemicals SAB, Antwerp, Belgium

In South America: Atlantic Refining Company of Brazil, Rio de Janeiro

ATLANTIC
PETROLEUM
CHEMICALS

THE ATLANTIC REFINING COMPANY



IT'S A SMALL WORLD

AND MARCHON SURFACTANTS PLAY A BIG PART IN IT

To keep the wheels of industry turning, raw materials of many kinds must be produced in great quantities. Manufacturers of toilet preparations all over the world look to Marchon for their particular raw materials.

SHAMPOO RAW MATERIALS

Marchon supply a range of basic chemicals from which all varieties of shampoo can be compounded. These raw materials are the only products of their kind manufactured from fatty alcohols of United Kingdom origin. Why not write for data, samples or advice?

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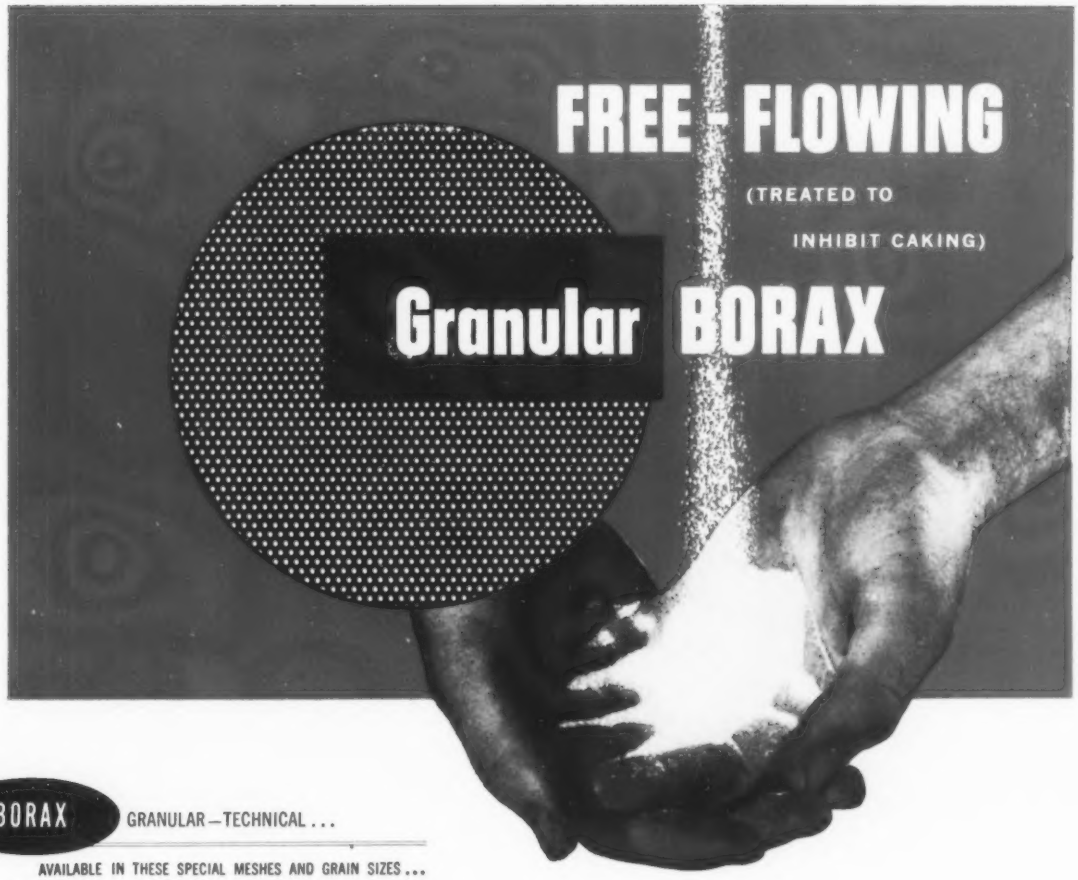
MARCHON PRODUCTS LIMITED, WHITEHAVEN, ENGLAND. MEMBER OF THE ALBRIGHT & WILSON GROUP OF COMPANIES.

U.S. AGENTS: Aceto Chemical Co. Inc., 40-40 Lawrence Street, Flushing 54, New York. Telephone: INdependence 1-4100.

CANADIAN AGENTS: Tennant & Michaud Co. Ltd., Suite 905, 321 Bloor Street East, Toronto,

and 4795 St. Catherine Street West, Westmount, Montreal 6.



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AVAILABLE IN THESE SPECIAL MESHES AND GRAIN SIZES . . .

Name & Screen Designation	Typical Particle Size Range U. S. Standard Sieve No.		Screen Specification U. S. Standard Sieve No. When Packed	
Granular 8/40 (Special Mesh)	+ 8 + 40	Nil 96.8%	+ 45	min. 95%
Granular 8/60 (Special Mesh)	+ 8 + 60	Nil 80.0%	+ 8 +100	none min. 90%
Granular 30/60 (Special Mesh)	+ 30 + 60	0.5% 69.8%	+ 30 +100	max. 1% min. 80%
Granular 30/70 (Special Mesh)	+ 30 + 70	0.3% 71.0%	+ 30 + 40	max. 1% max. 20%
Granular 30/80 (Special Mesh)	+ 30 + 80	0.8% 76.6%	+ 30	max. 1%
Granular 30/100 (Special Mesh)	+ 30 +100	Nil 86.7%	+ 35 +100	none min. 85%
Granular 40/100 (Special Mesh)	+ 40 +100	Nil 89.0%	+ 40 +100	max. 0.5% min. 88%
Granular 40/140 (Special Mesh)	+ 40 +140	0.1% 88.8%	+ 35 +100	none min. 50%
Granular 40/200 (Special Mesh)	+ 40 +200	0.1% Bal. 1%	+ 30	none
Granular 60/200 (Special Mesh)	+ 60 +200	0.1% 66.7%	+ 60	max. 1%
Granular 80/200 (Special Mesh)	+ 80 +200	2.0% 47.6%	+ 60 + 80	none max. 5%

Powdered Hand Soaps are better performers when borax is part of their make-up. They work better in any water — cut grease quicker — and feel smoother. Our granular borax is free-flowing and 100% soluble. This material is now available to you in any of the many special uniform meshes listed at left. Samples, bulletins, or technical advice can be obtained from the sales office nearest to you. Write today!

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HD-90 *detergent flake*

...WORKS IN ANY KIND OF WEATHER

Remember last summer— recall processing problems? Forget them! For good! Pilot HD-90 is the reliable, all-weather alkyl aryl sulfonate that keeps production rolling along in high gear — even on the hottest, sticky, humid days. It is easier to measure and to pour, with fewer clean-outs. HD-90 is all-weather protection for your products, too.

Pilot HD-90 offers more detergent suds than any other material at a competitive price. That's because it's hard working — 90% minimum active drum-dried flake.

Pilot HD-90 is purer: odorless and whiter in color; dust-free and dry flowing. Pilot processes HD-90 at sub-zero temperatures, eliminating undesirable characteristics and building in the cleansing and sudsing character.

Don't wait until hot weather forces a shut-down. Prevent it by starting to use Pilot HD-90 now.

Packed in polyethylene lined fibre drums and 5-ply paper bags.

Write for literature and samples.

PILOT *Chemical Company of California*

P.O. BOX 22130 • LOS ANGELES 22

Basic Processors of Hydrocarbons for
Sulfonate Flake
Sulfonate Liquids
Sulfonic Concentrates

Progress with FATTY ACIDS

FROM TORRID TROPICS TO SUB ZERO STRATOSPHERE

Stearic Acid plays an important role in the lubrication of today's longer-range, higher-flying planes. It is regularly converted by grease manufacturers to lithium stearate, which is further combined to produce all-temperature-reliable lithium grease.

1 BATH IMPROVES SYNTHETIC FABRICS 2 WAYS

A single soaking now makes man-made-fiber fabrics both static-free and water repellent. New bath formulation, developed in Czechoslovakia, calls for combining either Stearic or Oleic Acid and chromic chloride. Reportedly, the Oleic Acid gives a softer effect on knit goods.

SMOOTHER LICKIN' BECAUSE OF OLEIC ACID

Oleic Acid, when converted to glycerol monooleate and similar derivatives, makes ice cream smoother in texture. And prevents peanut butter, another favorite food of children, from separating into liquid and solid phases.

Below are facts you should know about two Fatty Acids produced by A. Gross. Why not write for samples and additional information on the Fatty Acids we produce. Send for the latest edition of the brochure "Fatty Acids in Modern Industry." Address Dept. S-4.

	HYDROGENATED TALLOW F.A. GROCO 58	WHITE OLEINE GROCO 5L LOW LINOLEIC
Titre	58° – 60°C.	2° – 5°C.
Titre	136.5° – 140.0°F.	36° – 41°F.
Color 5¼" Lovibond Red	1.0 max.	1 max.
Color 5¼" Lovibond Yellow	5 max.	8 max.
Color Gardner 1933		2 max.
Unsaponifiable	0.75% max.	1.0% max.
Saponification Value	204 – 207	201 – 206
Acid Value	203 – 206	200 – 205
% F.F.A. as Oleic Acid		99.5 min.
Iodine Value (WIJS)	2.0 max.	90 max.
Refractive Index 50°C. (Av.)		1.4490
Total Polyunsaturated F.A.		3.5% max.

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BTC-2125®

The quaternary that really does the job and sets the standard.

ONYX® CHEMICALS

ONYX CHEMICAL CORPORATION

190 Warren Street, Jersey City, New Jersey

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The hidden plus is at least **750** ppm water-hardness tolerance. You can have this, at no additional cost, if your formulator is using **BTC-2125**® as the active ingredient in his sanitizer or detergent sanitizer.

Highest phenol coefficients, maximum biocidal properties mean extra safety and performance for you.

The active ingredient designation for **BTC-2125** offers you ultimate in environmental sanitation for same dollar spent.

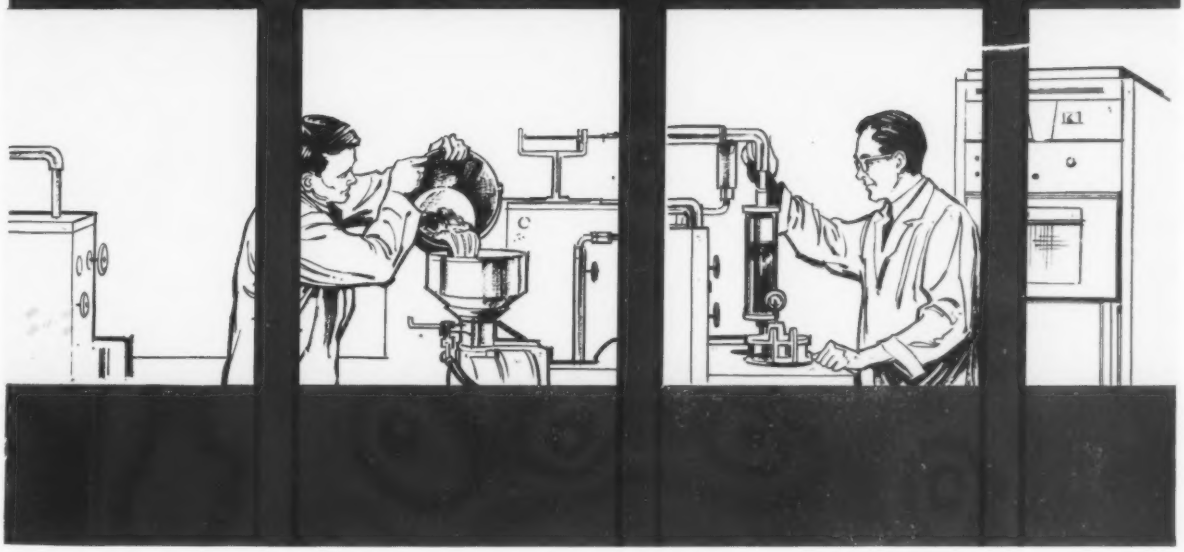
BTC-2125 is a carefully controlled blend of two distinct quaternaries, alkyl (C_{14} 60%, C_{16} 30%, C_{12} 5%) dimethyl benzyl ammonium chlorides and alkyl* (C_{12} 50%, C_{14} 30%, C_{16} 17%, C_{18} 3%) dimethyl ethylbenzyl ammonium chlorides. When one or both of these active ingredient statements appear on the label, you are assured of the very best of quaternary germicides.

Be sure **BTC-2125** is the active ingredient statement when specifying germicides. The finest products are made with the best quaternaries. Insist that the product **you** use contains **BTC-2125** . . . the "hidden plus" in the superior germicidal products. Onyx provides the required quality, research and development that go with a company that puts fifty years of experience and leadership behind their products.

* U. S. P. 2,676,986

BONUS FOR ALKALI USERS...

synergized technical service from fmc®



The new wing at our Princeton Research Center houses the combined application research staffs of all FMC Inorganic Chemical Divisions.

Working there as an integrated team, their over-all capabilities are vastly multiplied. They have the newest equipment to reproduce many of the important basic processing operations used in the industries we serve. And they are closely supported by our superbly equipped analytical-research groups.

This modern, customer-service laboratory is another FMC activity designed to help you use our products more effectively and economically. It supplements the valuable assistance rendered in customers' plants by engineers, technicians and industry specialists working out of our plants, offices and laboratories.

Remember this outstanding service the next time you have a problem involving alkalis. And next time you're in the market for alkalis, remember FMC.

CAUSTIC SODA 50% and 73% Liquid, Regular and Rayon Grades; Flake, Solid and Ground
CAUSTIC POTASH 45% and 50% Liquid; Flake **SODA ASH** Light, Intermediate and Dense Grades

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FOOD MACHINERY AND CHEMICAL CORPORATION

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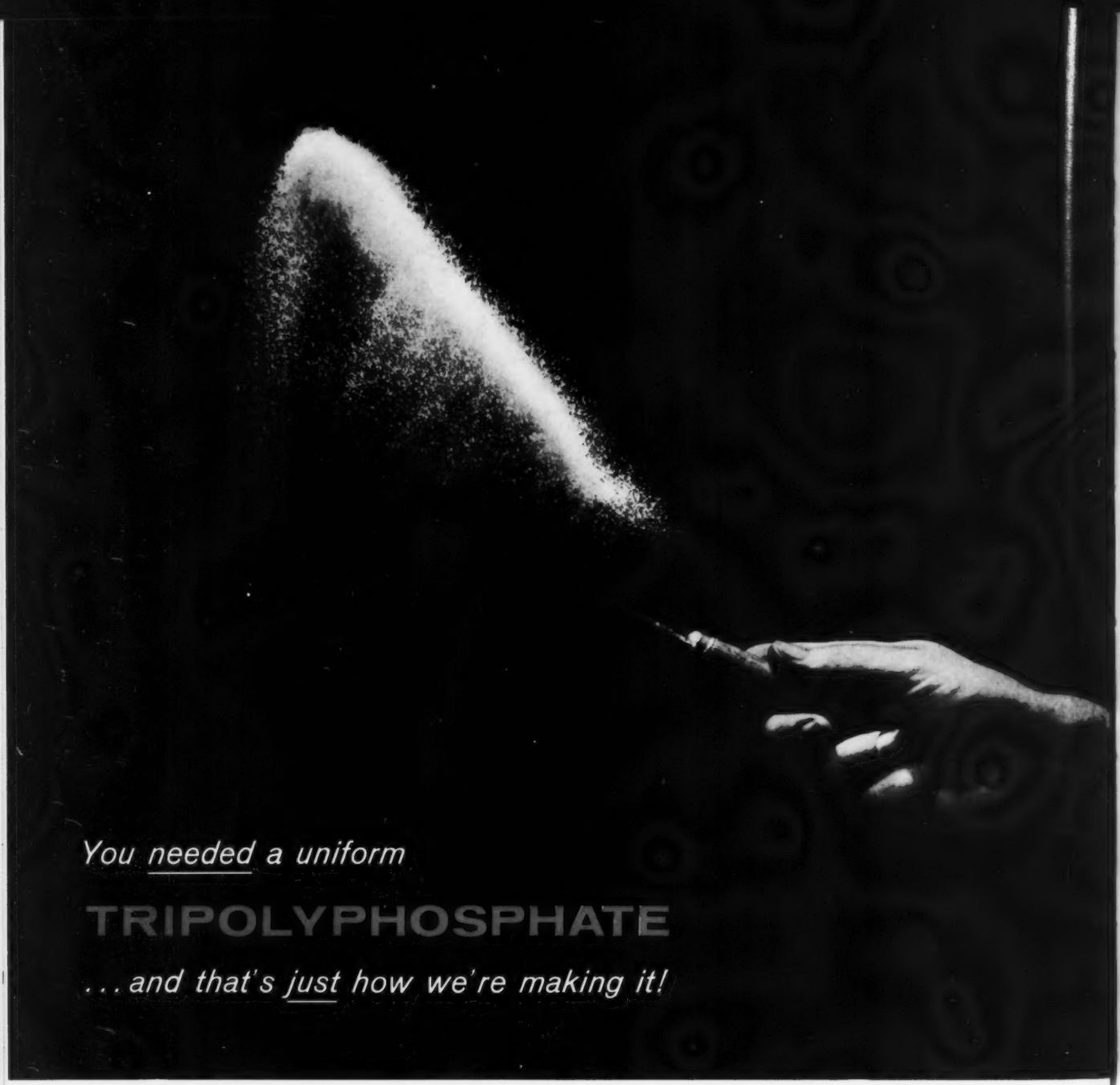
General Sales Offices:
161 E. 42nd STREET, NEW YORK 17



UP-TO-DATE manufacturing equipment and methods make the difference. Every known technical advance has been incorporated into the new "AA Quality" process to provide a sodium tripolyphosphate that is remarkably uniform, chemically and physically.

The pay-off is *yours*—in a highly dependable performance that is passed on to the formulations in which it is used.

We'd like to send you a sample—and we know you will like what you find.

Top detergent quality in every granule...

AA QUALITY SODIUM TRIPOLYPHOSPHATE

AA QUALITY SODIUM TRIPOLYPHOSPHATE
AA QUALITY TETRASODIUM PYROPHOSPHATE
AA QUALITY TRISODIUM PHOSPHATE
AA QUALITY DISODIUM PHOSPHATE

Chemical Division
The American Agricultural Chemical Company
100 Church Street, New York 7, N. Y.

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ROOM AT THE TOP

FOR YOUR PRODUCT

for creative fragrance

TALENT

check first with . . . **Albert Verley & Company**

SEND FOR SAMPLE . . .
C-281—Pumice Soap Odor #5
$2.50 per lb.

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• Synthetic Aromatic Products and Organic Isolates • Bouquets and Finished Compositions
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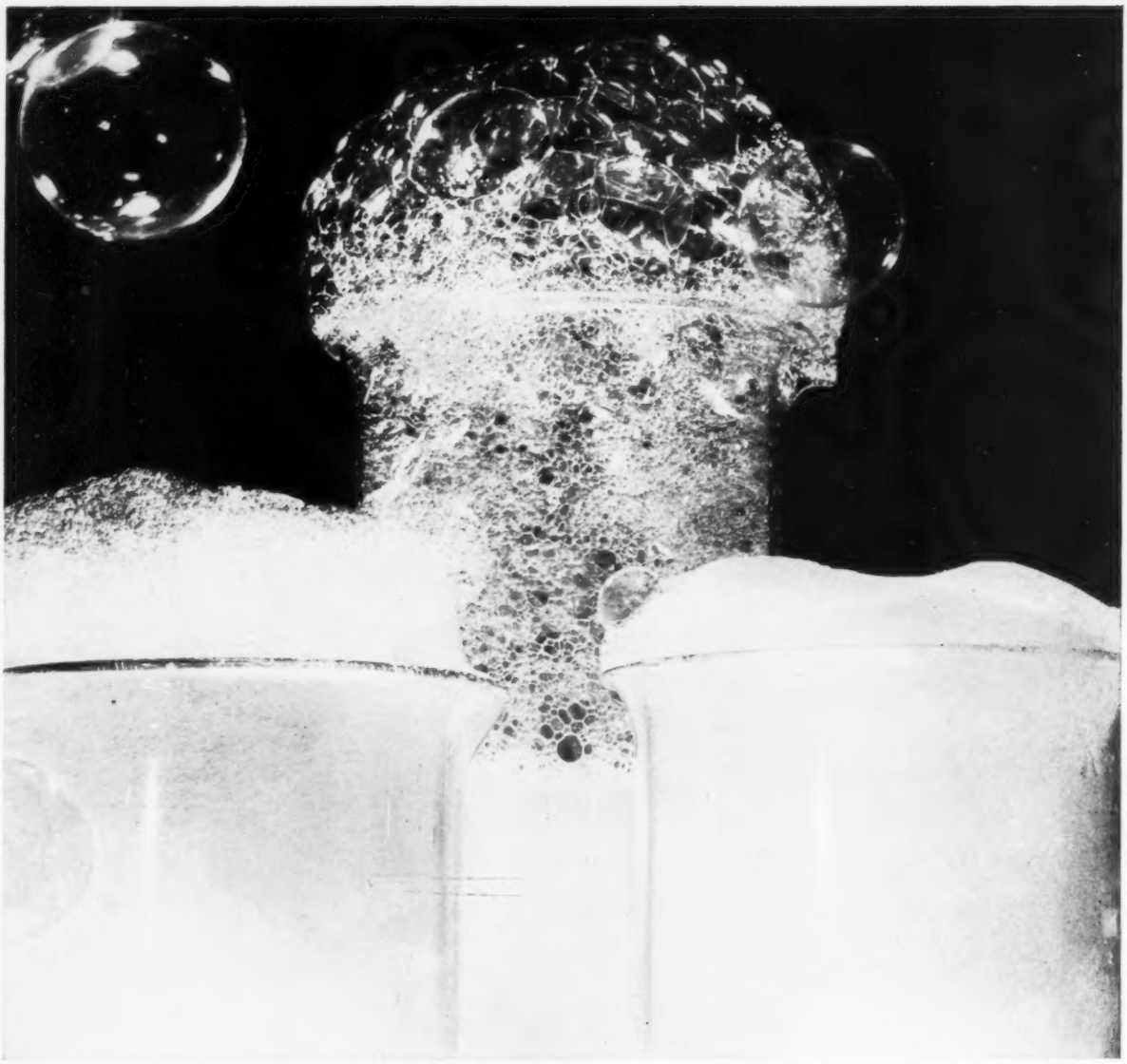

Bubbles are 99% air... but they mean a lot to the man who buys them

And bubbles are one of the things your customer buys when he orders your detergents or other surfactants. In the illustration above, for example, the foam shown at the left is appropriate for a car-washing compound. The one in the middle is more suitable for a bubble bath. And the one at the right is ideal for a shampoo.

Ultra can supply you with not only the right foam characteristics but also all the other properties you need in compounding practically any detergent or other surface active material—whether it's for play, like a child's bubble liquid—or as practical a product as a low-sudsing floor cleaner or an air-entraining agent for concrete and gypsum wall board.

From the broad line of Ultra surfactants—including Sulframin® alkyl aryl sulfonates, Ultrapole® amine condensates and Ultra xylene and toluene sulfonates—you can choose the compounds that best meet your requirements for detergency, foam, color, clarity, solubility and physical form. Choose from liquids, slurries and spray- or drum-dried solids.

Like further details? Phone or drop us a note. We'll be glad to answer any questions you may have or supply a copy of our comprehensive new brochure.

Ultra Chemical Works, Inc., Division of Witco Chemical Co., Inc., 2 Wood Street, Paterson, N. J.

as the editor sees it...

LABELING ACT

The effective date of the penalty provisions of the Hazardous Substances Labeling Act was postponed from August 1, 1961 to February 1, 1962 on all substances other than those classified as "highly toxic, extremely flammable and flammable." This five-months postponement obviously is inadequate. The Chemical Specialties Manufacturers Association has requested that the effective date be postponed until 1963.

As things stand at the moment, opposition to the proposed regulations for enforcement of the new law is practically unanimous. Except for a few professional representatives of alleged consumer groups whose hearts bleed constantly in behalf of the downtrodden public, we know of nobody willing to accept the regulations. In short, we especially find qualified persons strongly opposed, — and we use the term, "qualified persons" advisedly.

In the chemical specialties industry, there is still complete confusion and consternation. That this confusion can be eliminated in a year or even longer, we have our doubts. It took much longer to get the Federal Insecticide Act and the Food, Drug and Cosmetic Act lined up and operating under sets of sensible regulations. And the Hazardous Substances Labeling Act regulations are ridiculous and far from acceptable to any person or firm who will be regulated by them.

* * * * *

BANNED

The banning of propane and butane as propellants by New York City in certain aerosols, namely hair sprays, paints and lacquers, came as something of a shock to some aerosol loaders and marketers. What can be even more of a shock is the fact that the New York City Fire Department, we are informed, plans to go further and ban the use of propane and butane in *all* aerosols even including shave cream, hand lotions, laundry starch and the like. That this will seriously affect loaders who have been using these lower-cost propellants goes without saying.

It is our feeling that the New York City Fire Department should have called an industry conference of some sort before issuing the ban. If the Fire Department had evidence, it should have been revealed to industry. But nary a word until the edict was published. And we wonder about these same gases which are stocked and sold in forms other than aerosols. And we wonder also about other cities following New York, a not uncommon practice in fire, safety and sanitation matters.

That this is too serious a matter to be decided without checking all the evidence seems apparent. Butane-propane today, what tomorrow? We feel that even the suppliers of fluorohydrocarbons who stand to profit by the ban will agree. To us, it looks like somebody at the Fire Department has gone off the deep end. The whole thing should be immediately reconsidered at a full conference with industry, all industry, loaders, marketers and suppliers of all propellants.

* * * * * *

UNDERDEVELOPED

Based on correspondence which we receive from various sectors of the globe, especially from the so-called underdeveloped countries, a great future for detergents and soaps is amply assured. Say what we will, the world is still soap hungry! In the dark reaches of Africa, Asia and even South America, a thirst for knowledge of soap making has developed. In some areas, they still make soap, — when and if they are able to make it, — as it was made in Europe and the U. S. a hundred years ago. Old iron kettles or drums, direct fire, tallow or grease loaded with sinews, skin, bones, caustic of any kind they can get, silicate if available. And for the finished product, the demand constantly is greater than the supply. Apparently, the virtues of cleanliness have suddenly been discovered along with the new freedom.

Those of us who are used to having soaps and

Once in a blue moon a really fragrant synthetic arrives— *Lilial** ***—Givaudan's contribution to floral naturalness!*** *Lilial*—a pure aldehyde with an intense and diffusive note that recalls linden blossoms, with the emphasis on fragrance, represents a new high for synthetics in perfume elegance.

Lilial has remarkable tenacity and lends unmatched floralcy, intimate warmth and unique naturalness to almost any composition. On a perfume blotter it lingers for more than a month.

Unusually stable in soap, *Lilial* is long-lasting and diffusive. It is available in quantity—at a moderate price. No one synthetic has ever presented more desirable qualities to the perfumer.

Samples and technical data are available upon request.

*U. S. Pat. No. 2,875,131—Trademark Reg. U. S. Pat. Off.

GIVAUDAN

GIVAUDAN-DELAWANNA, INC.

321 West 44th Street
New York 36, N. Y.

detergents readily available at low cost find it difficult to appreciate an economy where soap or other cleaning agents are so scarce that they seemingly are worth their weight in gold. But the great enemy of increased soap consumption is hunger. And in most underdeveloped countries the paramount problem is still to fill one's belly with food. Cleanliness can come later. This new interest in soaps, however, which is apparent on all sides seems to indicate that the progress of civilization is beginning to reach the cleanliness phase. Hence the new interest in soap making methods. Off hand, we would say that world soap consumption could grow four or five pounds per capita over the next decade due primarily to increases in underdeveloped countries.

* * * * * *

SENIORITY

The famous Glidden Company case of "vested seniority rights earned by long-time employment" has now gone to the U. S. Supreme Court. Reversing a Federal District Court in New York, the U. S. Court of Appeals held Glidden liable for damages to employes for loss of jobs and seniority rights when one of the company plants was closed down and its operations transferred to another plant. The Appeals Court held that the company should have offered the employes of the closed plant jobs with full seniority rights at the take-over plant even though the union contract at the closed plant had expired.

That a high U. S. court holds that employes have vested seniority rights even after the union contract under which they worked has expired, their employment terminated and the plant closed, comes as a shock to most of us. The potential effect on any company with more than one plant could be devastating. Closing or consolidating plants happens regularly. Management is often forced to such means to cut costs, meet competition and merely to stay alive. Why is plant labor to receive preference over executives, clerks, bookkeepers, and others who get caught in the economic meat-grinder?

Far be it from us to question the momentous decisions of our high courts, even though we may sharply disagree with them. But if the courts,—and not excluding government bureaus, — are continually to throw monkey-wrenches into the wheels of industry, how in the name of good horse sense can our alleged free enterprise survive? For the sake of industry as a whole, we hope the U. S. Supreme Court will see it this way and uphold the original decision of the New York District Court.

* * * * *

SPIKE HEELS

Spike heels are still the bane of the maintenance man's existence. Slowly but surely his floors are being ruined by indentations which cannot be removed. And he is at his wit's end what to do about it. In the case of stores, public buildings, and the like, there doesn't seem to be too much that he can do. But in some offices and office buildings, something is being done about it, — and it's not rubber or plastic caps to fit over the heels.

Damage has been so bad in some office buildings, plant offices and the like that a ban has been placed on wearing spike heels by employes. Others are more difficult to control. Employes who show up for work in spikes now have their choice in some offices, — carry soft or low-heel shoes to put on before entering the premises or be sent home and docked a day's pay. Drastic, but we imagine effective.

Sanitary supply salesmen who are not familiar with this "get-tough" policy of employers might do well to pass the word along among their customers. It's a cinch that spike heel damage is more of a hindrance than a help to sanitary supply sales.

* * * * *

TALLOW

Although the outlook for tallow supplies for the next few months appears good there could be a tightening of supplies and a consequent boost in prices possibly by early fall. Tallow prices have remained fairly stable over the past year, with current price levels of 6⅛ cents about what they were a year ago. As in the international political circles, Russia is the big question mark. Based on unfavorable agricultural conditions in Russia, trade sources are predicting that Russia will shortly step into the market with a multi-million pound order for tallow. A substantial price rise is expected to follow and put the squeeze on soap prices, which are none too healthy as a result of the depressed market for glycerine.

BUILD HEAVY-DUTY LIQUID DETERGENTS WITH LIQUID SILICATES...

for instance—these PQ colloidal silicates

SILICATE	%Na_2O	%SiO_2	%TOTAL ANHYDROUS SOLIDS	%Na_2O:%SiO_2 RATIO
STAR	10.60	26.5	37.1	1:2.50
STARSO	13.40	24.1	37.5	1:1.80
E	8.60	27.7	36.3	1:3.22
KASIL #1	8.30 K_2O	20.8	29.1	1:2.50 K_2O:SiO_2
KASIL #6	12.45 K_2O	26.2	38.65	1:2.10 K_2O:SiO_2

They support your liquid detergents with effective cleaning power in wetting, soil suspension, emulsifying and saponifying oils and greases. In addition there is optimum performance in prevention of redeposition of soil, which boosts the whiteness retention, and in protection against corrosive attack on metals by organic synthetics and phosphates.

Stability of the mixtures depends in part upon the type and solubility of the phosphate, the ratio of the silica to alkali metal oxide in the silicate. Our technical representatives shall be glad to discuss with you.

For minimum costs, look to the PQ sodium and potassium silicates. Delivered in tank cars and trucks.

PQ

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9 PLANTS • DISTRIBUTORS IN OVER 85 CITIES IN THE U.S.A. & CANADA

as the reader sees it...

"Another Look . . . "

Editor:

Your editorial on approved lists of maintenance products in the June issue of *Soap and Chemical Specialties* is excellent, and we agree with it 100 per cent. Our feeling in the past has not been favorable toward these "organized" approval programs, but we felt we had to go along with them from a competitive and association viewpoint. As to our future policy, we will give this matter another look.

We particularly agree with your thought in the editorial: "Who can stop the gyp from having a suitable sample tested and then ship a different and possibly inferior or damaging product?".

We admire your aggressiveness and your work as an editorial crusader.

Name withheld on request.

—★—

Hazard Labels

Editor:

Confirming our conversation regarding the Federal Hazardous Substances Labeling Act, I enclose a copy of my letter to Congressman Steven Derounian, in the hope that others in our industry will take similar action to bring to the attention of members of Congress that the Act is intended to safeguard public health, and may lose its effectiveness if the proposed regulations are enforced which would destroy or dilute public regard for precautionary labeling.

The endeavors of this company or any other chemical specialty manufacturer to comply fully with the Act now appear to place it at a market disadvantage, due to the evident non-compliance of many manufacturers. While it is most certainly clear that literal application of the directives would create a situation in which so many relatively safe household products would bear monstrous bugaboos that the warnings on truly hazardous products would not receive proper attention. It would seem that firms whose products "conform" shall suffer the consequences of having a less attractive package when competing against those products bearing "adjusted" warning labels. While most of us conform because the "law is the law," it would be interesting, if not inspiring, to learn of the activities and positions relative to the Act taken by others.

Your presentation of the situation as it has developed is to be commended. We look forward to seeing you take an even more vigorous stand in outlining clearly what can be done at this stage of the Act's enforcement.

Stanley Chase, president
Afta Solvents Corp.
Glen Cove, N. Y.

In his letter to his Congressman, Mr. Chase points out that "the Department of Health, Education, and Welfare, through the Food and Drug Administration, seems clearly to be disregarding the intent of Congress by directing the over-labeling of chemical household products."

"Does it seem likely that public regard for caution will be increased when every package of soap, household detergent or other relatively safe chemical bears a prominent warning label? Is not the very purpose for which the law is intended destroyed when warning labels become commonplace on every product which could present a minor hazard when carelessly used?"

"This company endeavors to comply with all applicable legislation concerning its products. We have been among the leaders in clearly indicating on any products having a potential hazard, even in misuse, that sensible caution should be employed. We question, however, the wisdom of directives which require that relatively safe household chemicals bear prominent warnings on the front panel of the package. Public respect for precautionary labeling on truly hazardous products cannot be encouraged when such labeling appears prominently on products commonly used with safety in the home.

"I ask that you give this matter your attention in the hope that precautionary labeling of household chemicals does not lose its meaning by the enforcement of over-labeling."

SIGN OF THE TIMES: "Our Customers Have the Cleanest Homes" proclaims recently completed sign on billboard atop main plant and headquarters of West Chemical Products, Inc., Long Island City, N. Y. Thousands of commuters on Long Island Rail Road and travelers on New England trains to and from Pennsylvania Station see this sign daily.

FOR TOP PERFORMANCE FROM EVERY FORMULATION...

1.
Use Procter & Gamble products

2.
Use Procter & Gamble formulation assistance

ORVUS K LIQUID. A highly concentrated modified ammonium lauryl sulfate—formulated for increased sudsing and mildness. Exceptionally low cloud and pour points—highly fluid and easy to handle. Ideal for clear liquid shampoos, liquid bubble bath preparations, and liquid detergents when high foaming is required.

ORVUS AB GRANULES. A neutral synthetic detergent, wetting and emulsifying agent of the 40% active sodium alkyl aryl sulfonate type. A white spray-dried product that can be used effectively in the blending of bubble baths, car body shampoo, dishwashing compounds, dairy cleaners, insecticides, laundry detergents, rug and upholstery cleaners.

ORVUS WA PASTE. A neutral synthetic detergent and wetting agent whose active ingredient is mainly sodium lauryl sulfate. Excellent sudsing, wetting, dispersing and penetrating properties. Ideal for paste cream and liquid cream shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, glass cleaners, and especially effective for rug and upholstery cleaners.

AMBER GRANULES. A neutral 88%, 42°C. titer type soap of outstanding purity and uniformity. Well suited for the preparation of paste or gelled products because of its high titer. Its granular form makes it ideal for blending powdered products. Excellent for the compounding of hand cleaners, paste cleaners, polishes, and lubricants.

ORVUS ES PASTE. A specially developed synthetic detergent whose active ingredient is mainly modified sodium lauryl sulfate. Offers exceptional efficiency and stability over a wide range of operating conditions. Its excellent wetting, penetrating, sudsing, dispersing and emulsifying properties make it well suited for the preparation of liquid shampoos, bubble baths, liquid detergents, liquid floor cleaners, insecticides, car washes, emulsion cleaners.

KYRO EO. A neutral nonionic synthetic detergent of the 100% alkylphenol ethylene oxide condensate type. A clear light-colored liquid with a clean, pleasant odor. Its superior detergent, wetting and emulsifying properties offer excellent performance in liquid detergents, sanitizer-detergents, self-emulsifying solvents, laundry detergents, glass, textile, and dairy cleaners, insecticides, and bottle washing compounds.

IVORY BEADS. A medium titer, neutral spray-dried white soap of exceptional purity and quality. Well suited for compounding products where a mild but effective soap is required—hand soaps, polishes, protective creams, and dishwashing compounds.

Procter & Gamble products offer you a proven way to simplify your formulation problems and be confident of successful results. We invite your inquiry for further information and the opportunity to forward an Industrial Catalogue. Write to:

PROCTER & GAMBLE, Manager, Bulk Soap Sales Department, P. O. Box 599, Cincinnati 1, Ohio

Detergents . . . Cleansers . . . Soaps . . .

Soap as a gift is growing in popularity as a result of the adoption of novel ideas to soap and its packaging. This popular gift by Marly Toiletries, Inc., Brooklyn, features soap miniatures in a variety of shapes including flowers and hearts. Apothecary style jars in several colors come in two sizes. Plastic package of refills is at right. See article on gift soaps, p. 49.

New POLYOX water-soluble resins give toiletries that creamy-smooth feel

POLYOX resins add a pleasing lubricity to facial and hand creams . . . brushless shaving creams . . . lotions and other toiletries. In toothpastes, they give a desirable "mouth feel."

You can choose from a wide range of viscosities with POLYOX resins. In three grades, they have molecular weights ranging from several hundred thousand to over six million. Truckload quantities of POLYOX resins are available *now*—as are samples for laboratory projects and evaluation.

A Technical Representative in the CARBIDE office nearest you can give you more information on POLYOX resins. He can suggest starting formulations, and supply price and shipping information. For a new technical bulletin listing grades, properties, and numerous applications, write Dept. H, Union Carbide Chemicals Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N.Y.

POLYOX and UNION CARBIDE are registered trade marks.

UNION CARBIDE CHEMICALS COMPANY

UNION CARBIDE

Novelty soaps for both young and old have contributed largely to growth of gift soap market. "Soap on a Rope" for men, top left, and for youngsters, bottom right, make useful, appreciated gifts. Sachet soap, bottom left, is designed as child's gift to parent or friend. Nursery rhymes in soap are widely used (see photo upper right)

Growing Gift Soap Market

THE giving of soap as Christmas gifts has increased tremendously in the past few years, not only for children, but for every age group; both men and women. Industry sources say the annual total "fancy soap" market runs to about $23 million, with an estimated retail worth three or four times this figure. The bulk of the gift soap buying, of course, is done for the Christmas season.

Supply has kept pace with demand, and this year a colorful array of soaps awaits the Christmas shopper who wants to give a useful, attractive and generally inexpensive gift. The market is there, say producers of gift and novelty soaps, and it is just beginning to be tapped.

A July survey of leading producers of gift soaps, as well as a few select retail outlets specializing in these products, has uncovered a number of new and different items for the 1961 season.

Apothecary jars filled with miniature soaps in a variety of shapes will be one of the most popular items for holiday gift giving. Suitable for girls of any age, they are attractively priced to sell at retail for from $2.00 and up. One of the leading marketers of soap filled apothecary jars is Marly Toiletries, Inc., Brooklyn. Marly's jars come in two sizes: 10¼ inches high and 12½ inches. The smaller size, designated the "Princess" line, retails for $2.00. The "Queen" size line retails for $3.50. Jars are available in four colors: amethyst, pink quartz, amber and crystal. Jars are filled with soap miniatures in the form of rose buds, lemons, pine cones, pineapples, walnuts, strawberries or hearts. The soap is available in a wide variety of colors. Refills for the apothecary jars are available in large and small sizes to retail for $2.00 and $1.00, respectively. (See illustration of the apothecary jars on page 47.)

In the over $3.50 to $4.00 retail price range for gift or novelty soaps in reusable "pack-

New gift package from Revlon, Inc., New York. Three bath cakes, with "Intimate" fragrance, retails for $2.50.

ages" is a large glass hurricane lamp with brass fittings. This gift item, filled with soap, is being shown by a New York department store, and retails for $8.50.

Also expected to be popular for the Christmas gift market are the "soap on a rope" items. These shower soaps with rope attached are being widely adopted for a number of novelty items this year. They range in retail price from $1.00 to $2.00 and feature soap in the form hearts, basketballs, baseballs, daisies, bowling balls and clowns, to mention but a few. Soap with a rope is available, of course, with standard type soap bars for the adult user, as well.

It is never too early to start teaching youngsters good grooming habits and cleanliness. This was one of the reasons advanced by Denis I. Duveen, president of Duveen Soap Co., Long Island City, N. Y., producer of private label soaps for the greatly expanded market for gift soap for children. Another reason why this market is growing is the relatively low price for soap as a good looking Christmas "stocking stuffer."

"Hundreds of novelty soap items for children are priced under one dollar, and this without any federal tax added," according to Robert Ring, sales manager for Duveen. The consumer gets more for her dollar spent on soap than for any other gift, says Mr. Ring.

Duveen designs novelty soap products and their packaging for children not only with the youngters in mind, but also with an eye to appealing to adults who do the buying.

Unusual novelty soaps for children being marketed for the Christmas 1961 shopping season include an "Old King Cole" package. Included are figures in soap of the king and three gnomes in a cardboard castle complete with hinged doors from which the soap figures emerge. This item was made by Duveen for Stanley Home Products Co., Westfield, Mass.

A colorful figure of "Humpty Dumpty" in soap with shower cord has been introduced for this Christmas season by Marly.

Hewitt Soap Co., Dayton, O., is featuring a soap gift pack that is suitable as a child's gift to his mother. Four cakes of pink "sachet" soap with floral design are packaged in a silver box to retail for 49 cents. The soap is visible through the box top which has a large die-cut scalloped area that is covered with cellophane.

Hewitt is also promoting a "Company Manners" gift box of six bars of soap and 12 decorated paper towels for children's gift giving.

A full line of novelty gift soap items for children to retail for $1.00 or less is marketed by Lightfoot Co., New York. An assortment of 12 miniature ponies, lambs, ducks and bears, modeled in soap and packed in a colorful plastic gift box with cord handle, retails for 59 cents. Two dozen of the soap figures in a box retail

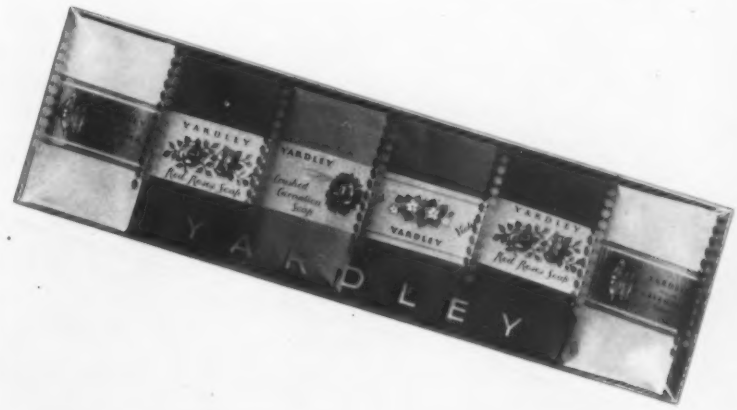
A "Guest Set," gift chest of five bars of "Tapestry" soap and 10 decorated paper towels, retailing for $2.50, is featured by Mary Chess, Inc., New York.

Not available on the retail market, but an unusual soap gift nonetheless, is the Presidential Box, produced by Duveen Soap Co., Long Island City, N. Y. It is used in the guest rooms of the White House.

for $1.00. Another Lightfoot gift item for children is a package of one dozen small soap figures in the shape of roses. This package retails for 59 cents. The roses come in yellow, blue or pink. In keeping with the boots and saddle trend, Lightfoot also has a cowboy gun set in soap, consisting of two pistols in a box to retail for $1.00. There is also a gun and pony soap set to retail for $1.00.

But the gift soap market is not entirely for the younger set or for women. "Soap on a rope" for the man's shower is a popular item of Avon Products, Inc., New York. Supplied by Duveen the six-ounce, round soap bar, which contains hexachlorophene, is stamped with a carriage. Soap is individually packaged in white cardboard box which has black cover and base overprinted with red band. A white scalloped circular design carries a line drawing of the carriage. For the man who has everything, Lightfoot is featuring 18 miniature golf balls (soap, of course) packaged in a decorated plastic golf bag, all of which retails for $1.00 Similarly, Lightfoot has a "Ten Pins" bowling set consisting of 10 "official," four-ounce bowling pins made of soap packaged in a nest gift box to retail for $2.50.

Getting away from the novelty soap gift items, a number of new gift packages of fancy toilet soaps have just made their debut for the Christmas, 1961, season. Among these are a new, hard milled soap by Yardley of London, Inc., New York. Tailored to meet masculine needs and taste, three bars retail for $1.50. Also available for holiday gift giving is an assortment of six, guest-size soap bars of "English Lavender," "Red Roses," "April Violets," or "Crushed Carnation" scented soap. Individually boxed, these retail for $2.25 each.



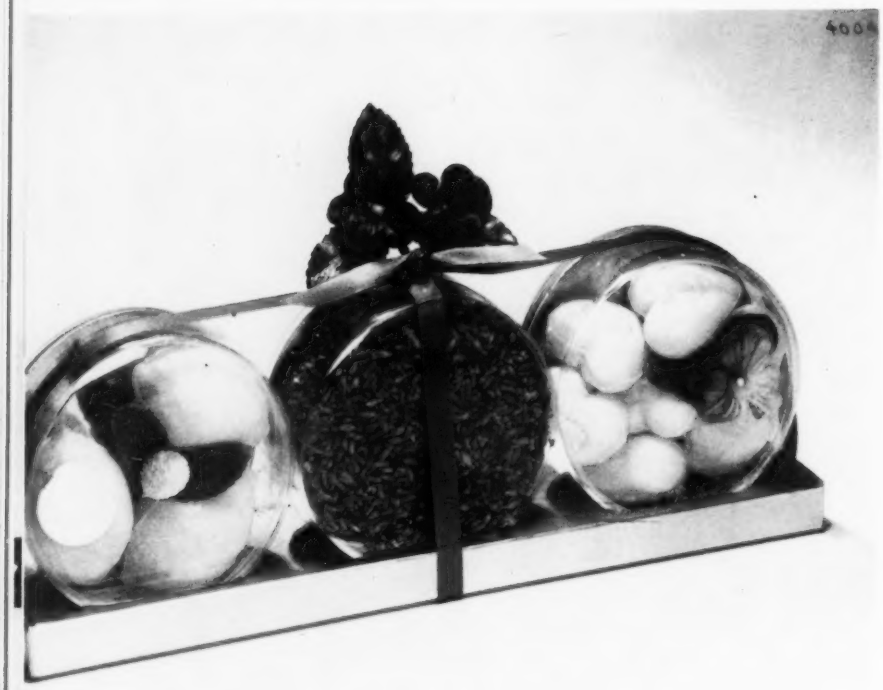
A gift package (top) of six guest-size tablets of Yardley soap retails for $2.25.

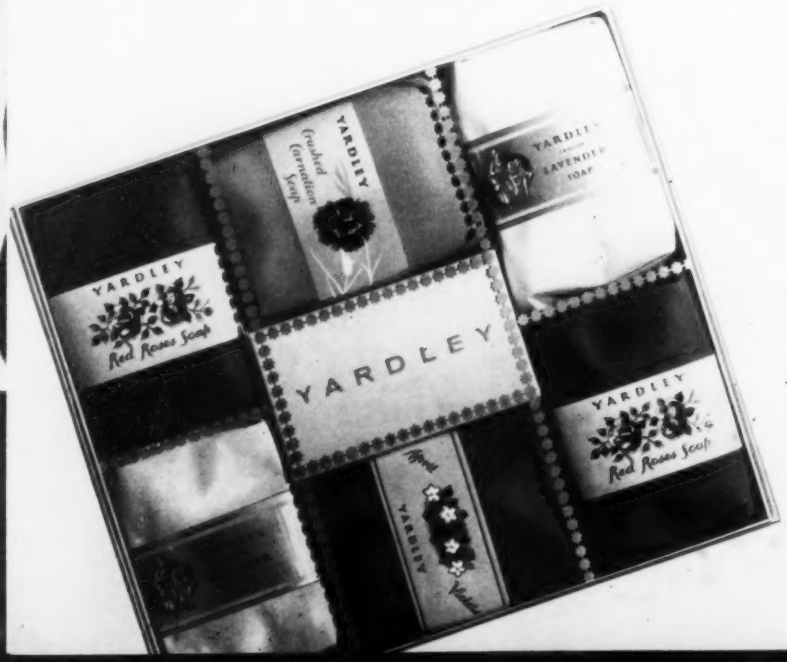
Yardley's Lavender Soap Chest in bath and guest size tablets retails for $4.50.

Three square-shaped bars of Yardley Soap for Men, (top, left), just introduced, retail for $1.50.

A three-in-one combination (center) from Marly Toiletries, Inc., Brooklyn, features lemon soap miniatures, left, lavender packet, center, and heart-shaped soap miniatures, right. Package retails for $2.

Assorted Soap Chest from Yardley contains two tablets each of "English Lavender" and "Red Roses," and one each of "Crushed Carnation" and "April Violets" and retails for $3.50.





Yardley has also introduced its assorted soap chest of six bars to retail for $3.50. Also available from this company is its "Lavender" soap chest, containing one bath size cake, four hand size bars and four guest size tablets. This package retails for $4.50.

Revlon has just added a new gift package consisting of three cakes of quality bath soap in a oval, die-cut top package to retail for $2.50. The fragrance of the soap is "Intimate." The soap, by Duveen, resembles a similar pack by Lanvan Perfumes, Inc., New York, to retail for $5.00, and Chanel's box of three cakes of soap retailing for $4.50.

Duveen Soap Co. produces an unusual four cake package of soap which won't be on the market at Christmas time. It is made expressly for the White House and bears a copy of the Presidential Seal and Residence on the bars. The company supplied the Eisenhower's with the same soap except that now there is pink for Caroline.

—★—

New Hollingshead Unit

R. M. Hollingshead Corp., and M. Sittenfield & Associates, recently announced the formation of the Synchem Corp., with offices at 840 Cooper St., Camden 2, N. J.

The new firm will engage in research, development and marketing of chemical biocides and other specialties, based on its patented quaternary ammonium compounds. These materials are characterized by unusual biocidal activity and sweet flavor. The company expects these quaternaries will create an entirely new scope in the fields of disinfecting, hygiene, and anti-fungal applications.

Testing Detergent Mildness

Soap and detergent products are tested for mildness on human subjects and animals; results show correlation and reproducibility

by J. D. Justice*, J. J. Travers, and L. J. Vinson,
Lever Brothers Co.,
New York

IN many laboratories an initial assessment of the mildness of a new experimental product is made by means of various tests using animal skin. The assumption is made in carrying out tests of this kind that there will be good correlation between the results obtained using animal skin and the properties of the product applied to human skin.

Several years ago, Drs. Traub and Spoor (1) discussed the problem of "The Correlation Between Animal and Human Testing of Materials Used in Skin Care." These authors suggested that "in general there is a direct interdependence between animal and human testing so that rather than a correlation of the two, one should attempt to assign each method to its most useful sphere."

Dr. J. V. Klauder (2) discussed the correlation betwen medicine and veterinary medicine from a dermatological viewpoint and came to the conclusion that the line dividing these two disciplines is disappearing—that is, that the correlation of dermatological findings on animal skin and human skin is good. It is the purpose of this paper to compare data obtained on some thirty commercial and experimental products using four testing procedures, two of which involve human subjects and two of which are carried out on animal skin. The actual composition of the products tested will not be presented since the primary emphasis will be on methodology and on the degree of correlation that exists among the methods utilized.

All the products discussed are in the general class of soap and detergent products. Included are examples of granulated and liquid laundry detergents, dishwashing detergents, hard surface cleaners, and toilet bars. In Table I the various products tested are listed by category. We will be asking questions of the type—if product A is milder than product B in one test procedure, will it also be found milder in the other three tests.

Table I.
Classification of Products Tested

I. Toilet bars (soaps, soap-detergent, and detergent bar):
Products 2-15 inc.
II. Liquid detergents:
Products 1, 16-21, 23-25, 30-32
III. Laundry soaps and detergents:
Products 22, 26-29

Arm Immersion Test

The arm immersion test, using human subjects, calls for panel members to be seated between two parallel troughs and immerse their arms in solutions of the products to be tested. The temperature of the solutions is maintained at 105°F. The complete forearm and a few inches of the upper arm are immersed. Immersions are carried out three times a day, at approximately two-hour intervals, for 15 minutes at each immersion.

The subject's arms are examined during the two-hour period following each immersion. A rating of 1 is assigned to arms showing slight reddening or erythema, and a rating of 2 for moderate erythema. When an endpoint, that is a rating of 2, has been reached on a given arm, the arm is no longer immersed. The cubital fossa appears to be the most sensitive area. The panel member continues to immerse the other arm until an endpoint is reached.

In Figures 1 and 2 data are presented to demonstrate the degree of reproducibility of this testing procedure. The data are presented as the logarithm of the number of immersions to reach an endpoint plotted against the cumulative percentage of the panel which reach the endpoint. For example, in the top line of Figure 1, 50% of the panel members had reached an endpoint by the seventh immersion or earlier and 75% by the eighth immersion. A straight line or a graph of this kind indicates that the panel members follow a log normal distribution in their reactions to the test product. In some fifty arm immersion tests this method has consistently given a satisfactory representation of the test data.

By definition, within one standard deviation on each side of the population means 67% of the

*Paper presented at annual meeting, Scientific Section of the Toilet Goods Association, New York, May 11.

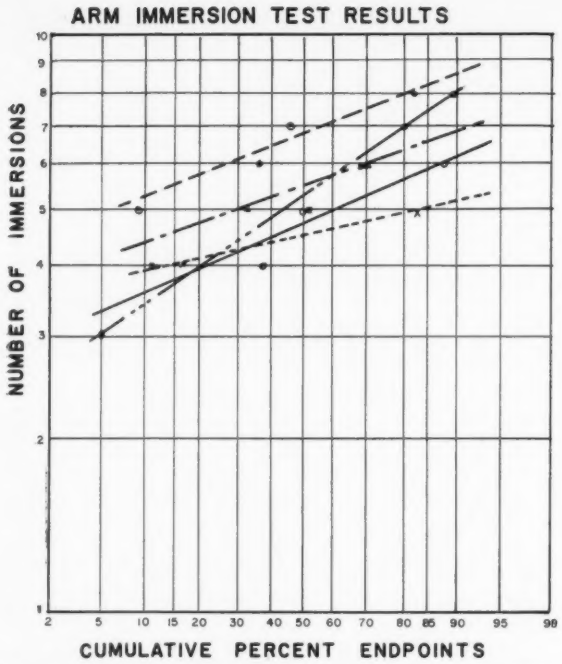


Figure 1—Five Arm Immersion tests with product 2 illustrating reproducibility.

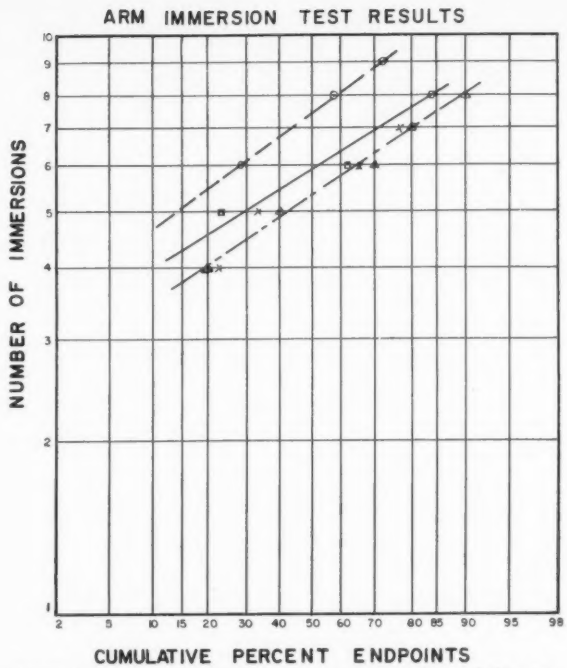


Figure 2—Four Arm Immersion tests with product 14 illustrating reproducibility.

population would be included. These limits can be obtained for most of the panels studied by multiplying and dividing the population mean by about 1.5. For a product which has a population mean of 6 immersions, ⅔ of the panel would thus be expected to reach their endpoint somewhere between 4 and 9 immersions. The actual value of 1.43 was obtained for this factor as the average of 55 values with a standard deviation of 0.27.

There are several factors which will affect the results obtained in this testing procedure. One of course is individual variations among panel members. Another which has been found to be important is the season of the year during which the test is carried out. It appears that the skin is more susceptible to this type of irritation during the winter months. In Figure 3 the results obtained in several tests during winter months are compared to those obtained on the same product during the summer. The difference is slight but appears to be real. In Figure 4 a larger difference between winter and summer is noticed with another product. The three experiments carried out during the winter months are quite consistent with each other and give an average population mean of about 7 immersions.

The value obtained during the summer cannot be calculated exactly, since, in several experiments, all ten panel members went through all the fifteen immersions which can be carried out in a single week without having reached an endpoint. The region labelled summer in Figure 4 was therefore obtained by assuming the same standard for this panel as was obtained in many other tests. Since no endpoints were obtained, the line for summer must lie somewhere above the line indicated in the figure.

Because of the seasonal and individual differences the real value of the arm immersion test probably lies in a direct comparison of two products. In this procedure seasonal effects are eliminated and since each panel member serves as his own control, differences due to variability between individuals are eliminated. In Table II the results obtained by the arm immersion test in twenty-eight paired comparisons are presented. The numbers of cases in which an endpoint was reached on the arm immersed in product A before it was reached with product B are indicated as "A milder than B." Cases in which the endpoint was reached simultaneously on both arms, or in which no endpoint was reached during the 15 immersions, are listed as A = B. These results will be compared below with data obtained using other testing procedures.

Human Patch Test

The human patch test has been used by many investigators and has proved to be of value in comparing several products on the same individual. In this test a gauze pad was saturated with the test solution at the desired concentration. The gauze pad is kept in contact with the upper arm for a period of 18 to 24 hours by means of an elastoplast coverlet which prevents the solution from evaporating.

The arms are examined one-

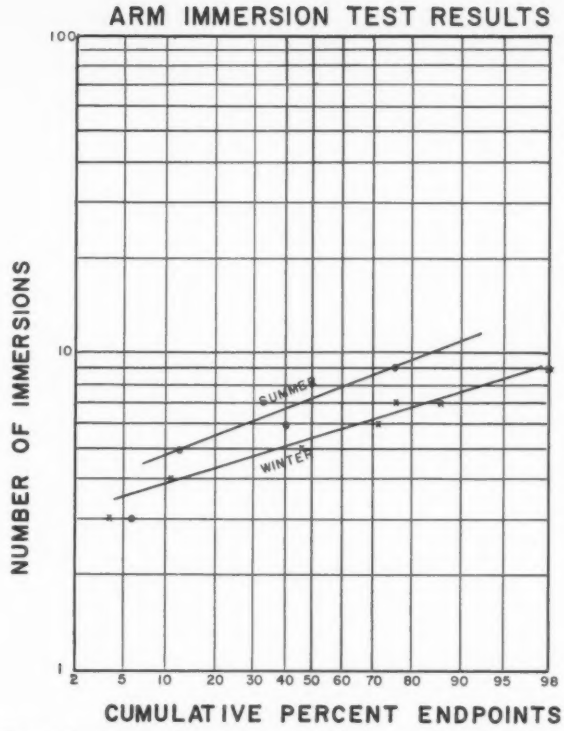


Figure 3—Comparison of seasonal effects or Arm Immersion test results with product 2.

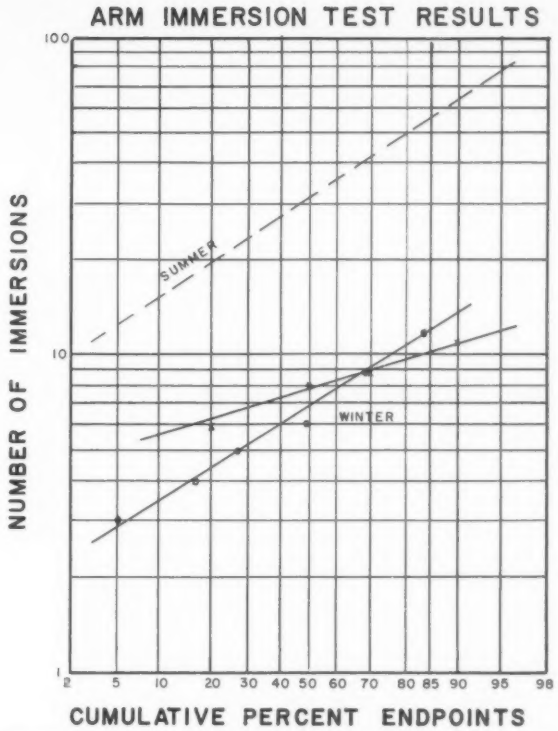


Figure 4—Comparison of seasonal effects on Arm Immersion test results with product 3.

half to two hours after removing the patch to allow tape reactions to subside, and the rating of 0, 1 or 2 is assigned to each product tested depending on the severity of the reaction. The rating scale is the same as that used in the arm immersion test.

This test procedure has the same advantages of the arm immersion test in reducing seasonal

Table III. Human Patch Test Results

Products Tested A	B	Conc.	Number of panel members indicating: A milder than B	A=B	B milder than A
3	2	8%	7	7	0
6	14	8%	3	5	0
15	8	8%	6	11	0
3	4	8%	1	8	0
6	13	2%	7	9	0
		4%	8	6	2
		8%	1	11	4
		8%	0	8	0
6	2	2%	6	2	0
		4%	15	6	0
		8%	12	10	1
26	27	8%	7	9	0
30	31	2%	0	22	0
		Full Strength	6	5	5

Table II. Results of Arm Immersion Tests

Products Tested A	B	Number of panel members indicating: A milder than B	A=B	B milder than A
4	5	8	2	0
5	7	3	8	0
8	9	8	2	1
3	10	5	13	1
3	11	8	1	0
6	11	2	7	1
12	2	17	24	2
3	13	4	2	0
3	2	5	1	0
6	14	7	0	0
3	14	7	0	0
8	14	1	5	1
15	8	3	7	0
3	4	3	7	0
6	13	11	1	0
6	2	10	1	0
16	17	0	12	0
18	1	7	0	0
1	19	0	9	0
20	21	0	7	1
1	22	5	2	1
23	17	6	4	0
18	24	3	5	0
18	25	5	4	1
26	27	8	4	0
28	29	10	6	0
30	31	2	4	1
30	32	1	8	0

and individual differences in a direct comparison of two products. In Table III the results obtained in product comparisons using the human patch test are presented.

Repeat Animal Patch Test

The primary irritation potential of toilet bars and detergents is determined in the repeat animal patch (RAP) test employing young adult Swiss albino mice. The criterion of mildness is based on the degree of epidermal destruction incurred after repeated exposure to the test preparation. The solution is applied to the immobilized animals by stroking the clipped backs thirty times with a cotton tipped applicator which has been soaked in the test solution. A rubber dam is then placed over the back of the animal to prevent evaporation. After ten minutes the application process is repeated, again followed by a ten minute test, until seven such treatments have been carried out. In this manner one operator can treat thirty-two animals in seventy-five minutes.

Mildness ratings are based on histological analysis of stained skin specimens (hematoxylin-eosin) relative to degree of epidermal erosion:

0—No epidermal erosion (very mild)

1—Small areas of erosion (fair mildness)

2—25-50% epidermal erosion (moderately irritating)

3—Over 50% epidermal erosion (strongly irritating)

4—No survivors.

Both the repeat animal patch test and the arm immersion test utilize the principle of eliciting a response by repeated exposures of the same area to the test material. In the arm immersion test the quantitative difference between the two products lies in the number of exposures necessary to achieve a prescribed level of irritation. In the repeat animal patch test the number of exposures is kept fixed and a quantitative measure of the effect of these exposures is made by histological examination of the excised skin.

The concentration of the test material can also be varied in the RAP test to obtain additional information about the effect of a product on the skin. In Figures 5 and 6 the effect of variations in concentration on the RAP score is shown. There appears to be a minimum concentration necessary to get an observable effect in this test. When products are tested with concentrations so low that both products give a rating of 0 to 1, it is sometimes difficult to distinguish between products which have been shown to be different by other testing procedures. It is therefore usually necessary to select a concentration range which will best show up differences among products.

If the standard scores, based on epidermal erosion, are identical for two products, other histological observations may be used to distinguish between them. These include thickening, vascularization, massing of heterophils, and eschar. In this test we do not use two products on the same animal to minimize individual differences, but as a standard procedure we use a group of four animals on each product. Differences among individuals are reduced somewhat by always using the same strain of mice. Seasonable differences are not important in view of the year round control of temperature and humidity in the animal room.

Repeat experiments over a period of time with the same product at the same concentration have shown the test to be highly reproducible even though there is an occasional aberrant value. In

(*Turn to Page* 99)

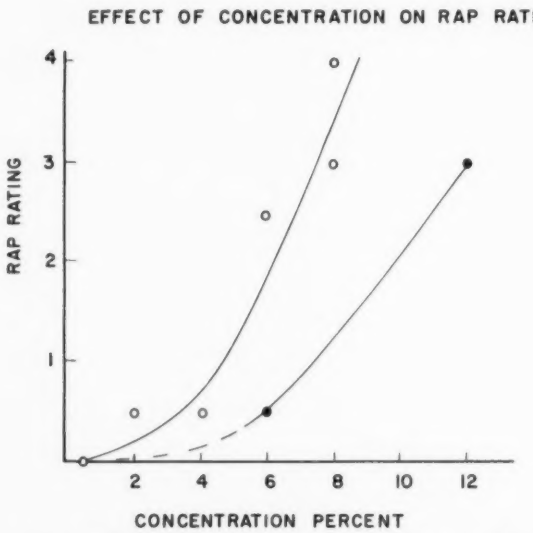


Figure 5—The effect of product concentration on ratings in the Repeat Animal Patch test.

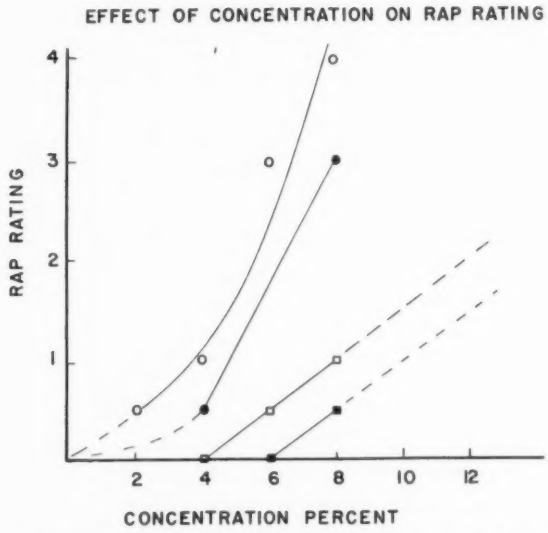


Figure 6—The effect of product concentration on ratings in the Repeat Animal Patch test.

Factors Relating to

Accidental Ingestion Hazard

By R. Owen Carter and John F. Griffith*
Professional & Research Services Department,
Product Development Division,
Procter & Gamble Co.,
Cincinnati

Part II.

ANOTHER very important factor in determining lethal dose has been found to be the concentration of the solution in which the test material is administered. Figure 4 shows the effect of concentration of dosing solution on LD_{50} values obtained with two washing product formulations identified as I and II, which are, incidentally, not the same as those identified with these numerals in Figure 3. The values were much lower when the materials were administered at 5-10% concentration in water than when given as concentrated solutions. The concentrated solutions, of course, simulate much more closely the condition of an accidental ingestion of washing products than do the dilute ones.

The effect of environmental temperature on the intraperitoneal toxicity of a large number of compounds has been reported by Keplinger, Lanier, and Deichmann (11). Tests were made with rats at 80°C (46°F), 26°C (79°F), and 36°C (97°F). Their results with seven materials that may be found in the home are listed in Table III. Environmental temperature had an appreciable effect in all cases. The effect was exremely large with kerosene and carbon tetrachloride. The acute intraperitoneal toxicity of these latter two was five to 10 times as great at 46°F or at 97°F as at 79°F. In-

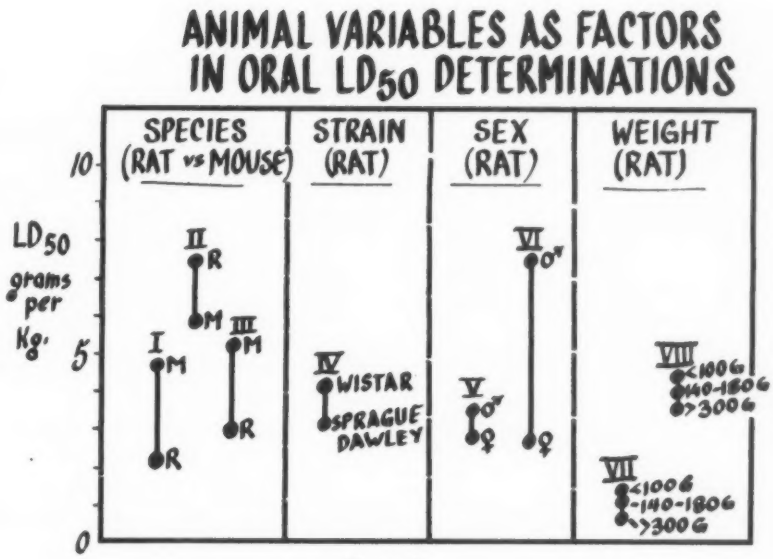
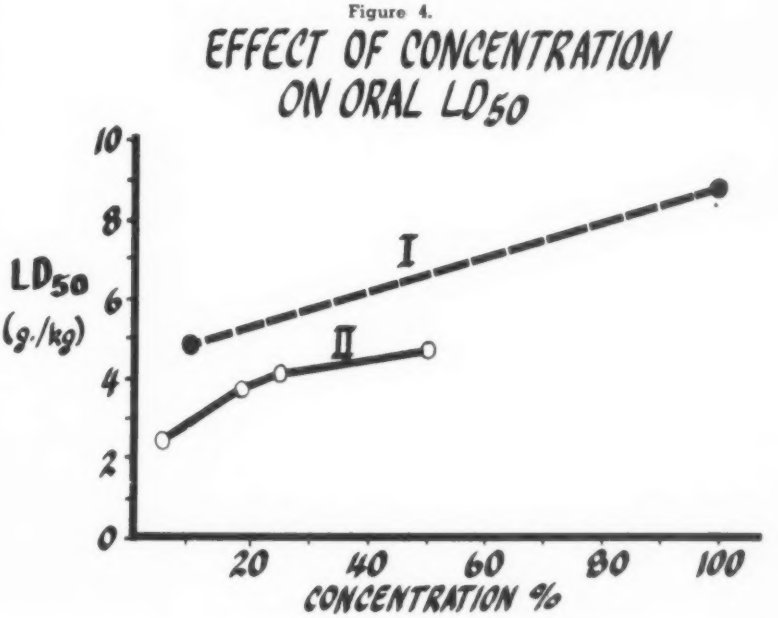


Figure 3

Figure 4.



* Paper presented during 47th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1961.

formation about the effect of environmental temperature on acute toxicity of household products by the oral route is not available but because of its potential importance, it is to be investigated.

From the preceding discussion, it is evident that an experimentally-determined acute oral toxicity value is not an absolute characteristic of a substance. If lines are to be drawn arbitrarily in terms of such values for the purpose of separating products into categories, say, for purposes of labeling, in order for them to be meaningful, conditions of the test will have to be completely and precisely specified. The anomaly of a situation is evident in which a product might be moved from a category requiring labeling to one that does not by the simple expedient of varying the conditions of an animal test.

Moreover, an acute oral toxicity value is not necessarily even a sufficient criterion for assessing the inherent capacity of a substance to produce harm or injury. The classic example, kerosene, has an LD_{50} in the range of 20-28 g/kg for rabbits (12), and thus would be rated practically non-toxic on this basis (13); yet it is an important cause of injury and death among children, due primarily to pulmonary damage apparently from aspiration of the material on ingestion or subsequent vomiting. An oral toxicity value is probably adequate for defining highly toxic substances, but for substances in the moderately toxic to practically non-toxic range, in which the vast majority of household products fall, its principal value is in guiding judgment. For that reason, it would seem wise to set any presumptive LD_{50} limit for classifying materials as "toxic" at a relatively low level. A limit no higher than 1 g/kg would appear reasonable; values as low as 0.5 g/kg have been suggested by competent authorities (9,14). Materials that human experience indicates to be hazardous can always be regulated on an individual basis regardless of animal data.

Table III. Effects of Environmental Temperature on Intraperitoneal Toxicity to Rats*

Compound	46°F	79°F	97°F
Acetylsalicylic acid	0.08 g/kg	0.42 g/kg	0.06 g/kg
Carbon tetrachloride	1.4	7.1	0.9
Kerosene	2.1	10.7	0.9
Mineral Spirits	5.7	8.6	3.8
Ethyl Alcohol	1.8	1.2	0.8
Pentachlorophenol	0.62	0.42	0.12
DDT	0.94	0.94	0.12

* Data taken from: M. L. Keplinger, G. E. Lanier, and W. B. Deichmann. *Toxicol. Applied Pharmacol.* 1:156-161, 1959.

Effect on Mucous Membranes: Acute toxicity tests give information primarily about lethality. Other biological tests can give other types of essential information for use in evaluating ingestion hazard. A simple, unglamorous one that we have found very helpful to provide reassurance of non-corrosiveness in cases of accidental swallowing is to hold a sizeable quantity of full-strength product in the mouth between the lower lip and the teeth for a predetermined period of time. It is the opinion of pathologists with whom we have discussed the matter that the mucous membranes of the mouth should resemble that of the esophagus as regards response to irritant and corrosive chemical action. Thus, effects in the mouth should reflect the likelihood that esophageal erosion and stricture might result from an ingestion. For reference, our major general-purpose synthetic detergent product produces no adverse effects when held in the mouth in the manner described for 15 minutes. This is not as unpleasant an experience as you might imagine, but it does become boring.

Emetic Activity: Emetic activity, i.e., the capacity for inducing vomiting, is another significant biological property to be considered because it is a real safeguard against toxic effects from ingestion of products that are not corrosive or do not contain important amounts of hydrocarbon solvents. Data in Table IV show the emetic activity of several soap and detergent products and of liquid chlorine bleach in comparison with two well-known emetics that are widely prescribed for first-aid in poisonings, namely mustard and syrup of ipecac. Results were obtained with dogs and are reported as ED_{100}, the dose producing vomiting in all of the animals in the experimental group (15). With one exception, emetic activity of the soaps and detergents was at least as good as that of syrup of ipecac and in several cases, much better. Accidental ingestion of appreciable amounts of soap and detergent products normally results in spontaneous vomiting and requires no emergency treatment, since doses producing vomiting correspond to very small fractions of the oral LD_{50} of these materials. Liquid chlorine bleach also was found to be a very effective emetic.

Volume of a Normal Swallow: So much for the biological effects of products that are essential in the evaluation of ingestion hazard. Other relevant factors will

Table IV. Emetic Dose for Dogs of Washing Products and Household Emetics

Material	ED_{100} for 4 Dogs (g/ or ml/kg)
Liquid bleach	0.1
Laundry detergent (granulated)	0.1
Mustard	0.1
Liquid cleaner (general purpose detergent)	0.2
Soap (toilet bar)	0.5
Syrup of Ipecac, U. S. P.	0.5
Dishwashing detergent (liquid)	0.75

be discussed next, beginning with a fundamental one that is a characteristic of the ingestors themselves, namely, the volume of a normal swallow. Most everyone would agree that if a material were sufficiently toxic to produce injury if a swallow or two were ingested, it should carry precautionary labeling. Interestingly enough, there does not appear to be any report in the literature of an experimental determination of what the volume of a normal swallow is. In view of this lack of reliable information, a study was undertaken by Dr. Charles E. Work of the Procter & Gamble medical department, and Dr. Daniel V. Jones, a Cincinnati pediatrician, to measure swallow volume with groups of men, women, and young children (16). The subjects drank measured quantities of cool water, and counts were made of the number of swallows required.

Results obtained with the three groups of people are given in Table V in terms of average volume per swallow expressed in cc's and also after conversion to a cc/kg basis. Volumes were found to be smaller than had been expected, and on a body-weight basis were quite constant for the three groups of subjects. Three to four normal swallows thus correspond on the average to about 1 cc/kg for men, women, and children. This, of course, corresponds to about 1 gm/kg for materials having densities of around one and seems to be approximately the right range in which to set a presumptive acute oral toxicity limit for the purpose of labeling. Consumption of greater quantities by mistake even by a small child does not appear to be likely in the case of household products, most of which are unattractive in taste and consistency.

Table V.
Volume of a Normal Swallow*

	Average Swallow Volume	
	cc	cc/kg body wt.
Men	21.3	0.26
Women	13.6	0.23
Children (1¼ to 3½ years)	4.6	0.33

* D. V. Jones and C. E. Work. *Am. J. Diseases Children*, in press.

Physical Properties of Product: Physical form of a material is a significant determinant of the ease with which it can be taken into the mouth and swallowed; thus it must be taken into account in ingestion hazard assessment. Solids are less easily ingested in quantity than liquids; bulky solids with low ratios of mass to volume are particularly difficult to consume. This is illustrated by Figure 5 which is a photograph of graduated cylinders containing three materials that are common in most homes: a general-purpose detergent, table salt, and cigarette butts. The materials are similar in LD_{50} when it is expressed on a weight basis, as is usual for solid substances. The cylinders contain the weights of each that would correspond to the LD_{50} doses for a 25-pound individual calculated from the LD_{50} values for rats. The bulky materials would obviously present less ingestion hazard than the dense one (table salt), other effects being reasonably similar. Experience confirms that the presence of all three of them in the home poses negligible risk. Incidentally, this picture emphasizes the point that for guiding practical judgment, oral toxicity values expressed in terms of volume of product may be much more meaningful than those expressed in terms of weight.

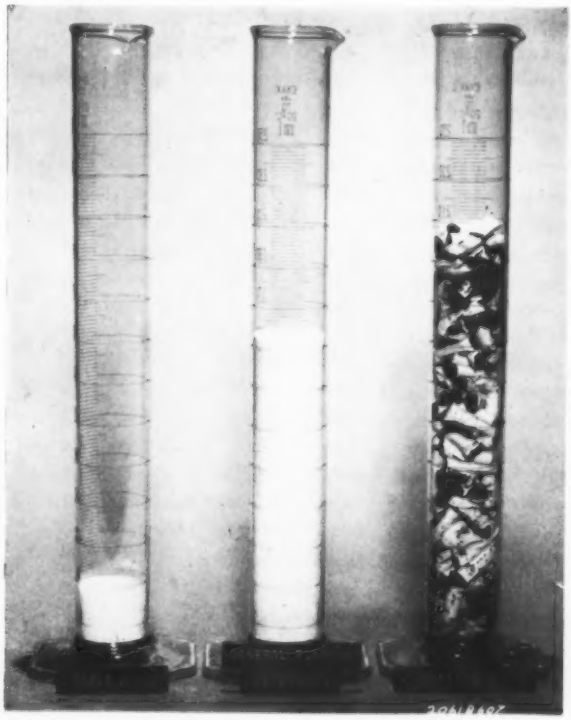


Figure 5.

Nature of Package: Nearly 60% of all accidental ingestions are reported to be from bottles (2). Possibly this reflects, at least to some extent, the fact that a bottle is a more customary and convenient drinking utensil for a small child. A really effective safety closure would undoubtedly be beneficial in preventing ingestion of liquids, but the problem of producing one that is convenient for the housewife but difficult to open for the child has not been solved satisfactorily for most household product packages. Of course, a package sufficiently small that it does not contain enough material to constitute an injurious dose, even if consumed in its entirety, essentially eliminates the question

of ingested hazard. The trend, however, is for consumers to prefer large, economy-size units. Pressurized, built-in applicator, and measuring-dispenser type containers are coming more and more into use. These containers have a practical advantage over conventional types in that they are difficult to drink from and also because they tend to discourage the irresponsible, but prevalent habit that adults have of transferring inedible products to soft drink bottles, drinking glasses and other common food utensils from which children are accustomed to drinking.

Positive Approaches

Every conscientious manufacturer does his best to produce innocuous formulations that will still deliver the performance the buyer expects. Warning labels are used when this objective cannot be attained, but it must be realized that label warnings have no meaning for a small child. Applied with good judgment, precautionary labels can prevent some accidents by apprising parents of hazards; they will also be of value in guiding treatment when ingestions do occur. What is needed most, however, is an effective campaign to educate adults to keep all materials away from the young child whether they are hazardous enough to carry warning labels or not. There is almost no substance, including foods, that will not be injurious if consumed in large enough quantity. Consumer education appears to be the only really effective means to reduce materially the frequency of accidental ingestions.

The most valuable contribution to the control of death and illness, once poisonous substances have been ingested, is probably the poison control center movement. It deserves and, in general, has received the wholehearted cooperation of all manufacturers of products found in the home. The local physician needs an authoritative source of information on which he can call for more details than a label can supply. Even in ingestions of unlabeled (non-hazardous) products, he will frequently wish to obtain data about possible sequelae and other effects to guide him in caring for his patient.

Adequate information for poison control center purposes can almost invariably be supplied without disclosing confidential product information. In addition to product ingredient data, Procter and Gamble and a number of other industrial organizations supply the centers with names and telephone numbers of company people who can be called collect by doctors day or night for additional consultation. Procter and Gamble also maintains its list of product consultants with the switchboard operator whenever a telephone number is listed for the company throughout the country. The number of calls that are received is very small considering the tremendous volume of P&G products sold; to be able to set at ease the mind of a distraught parent or to reassure a troubled physician or to save an already frightened two-year-old from the terrifying experience of lavage, which would otherwise be in store for him, is adequate compensation to the consultants for interruptioin of sleep or other inconvenience the calls may entail.

The value of follow-up of ingestion cases cannot be over-emphasized. Frequently the manufacturer is in a better position in this regard than the control centers. At any rate, we have been considerably more successful in obtaining follow-up data than most of the centers with which the problem has been discussed. Following receipt of a letter or phone call from a physician or poison control center in regard to ingestion of a P&G product, a physician of the medical department writes a personal letter to the caller describing our interest and enclosing a simple questionnaire to be filled out with the essential information needed. This procedure has resulted in 80% returns over the last year and a half. The number of incidents is not large enough to make this type of follow-up a chore, and the medical documentation that it affords is the best possible corroboration of the results of our safety testing program.

Summary

Review of the available ingestion and death statistics has shown that the safety record of those household products that are being brought under regulation by the new Federal Hazardous Substances Labeling Act for the first time actually is quite a good one, contrary to impressions given by recent publicity.

It has been pointed out that by far the best basis for assessing ingestion hazard of any product is human experience. When relevant human experience is not available, assessment requires consideration of a relatively large number of potentially important factors, including acute oral toxicity, corrosiveness, emetic efficacy, physical properties, and size and type of package. Blind reliance on acute oral toxicity values for safety judgments and labeling decisions, except in the case of highly toxic substances, can be misleading and in fact, is likely to be so.

Many important effects that can influence acute oral toxicity values have been demonstrated; for a given species of test animal they include strain, sex, weight, and nutritional state; concentration of the test material in the solution administered can greatly influence results; environmental temperature may be significant.

The volume of a normal human swallow, reported here, can serve as a rational basis for setting a presumptive limit for defining a "toxic" product for labeling purposes.

Finally, consumer education coupled with adequate product labeling, is needed in order to reduce materially the number of accidental ingestion incidents in the home. A well-organized poison control center program which has

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Forces in Detergency

By J. C. Harris,
Monsanto Chemical Co.
Dayton, O.

ADAM (1) indicated that for clean metals at least two main forces may influence adsorption: "Image" forces from the attraction between the electron just escaping from the metal surface, and its electrical image resulting from the charges in the metal by electron displacement; and the forces necessary to pass the potential barrier resulting from the surface electrical double layer. Image forces become negligible at distances greater than about 10^{-4} cm from the surface, according to Adam. The double layer is regarded as resulting from the electrons having a greater tendency to escape than the positive ions, and lying slightly farther from the surface. These forces then are effective for physical adsorption. However, when the metal surface is not clean of oxides, chemisorptive forces may be present, particularly in the presence of reactive materials such as fatty acids. In an investigation of the adsorption of a series of organic materials on a number of metals the ease of adsorption increased with increasing chain length, in the decreasing order of the polar end of the adsorbate molecule, acid < alcohol < ester. These adsorptions were reversible except where metal soaps formed. For nickel at low layer saturation the following values were found (19):

ΔG (free energy of adsorption)
ca. 3 kcal/mole—octadecanol
2.5 kcal/mole—ethyl stearate
ca. 6 kcal/mole—stearic acid

—ΔH (heat of adsorption)
12 kcal/mole—octadecanol
ca. 12 kcal/mole—stearic acid

The free energies of adsorption (calculated from surface tension data) for a series of dodecyl polyglycol ethers in aqueous solution were independent of chain length and were about −11 kcal/mole (89). Similar calculations for sodium dodecyl sulfate gave −10.5 kcal/mole.

Chemisorption or ion interchange with a metal surface most frequently requires energy of activation before it can occur. An example of energy of activation for the surface reaction of sodium dodecyl sulfate with copper was 3200 ± 300 cal. (96). Adsorption of n-nonadecanoic acid on freshly machined metal surfaces (86, 87) suggested a degree of activation of the metal surface. Certain sites exhibited quite rapid adsorption, probably as a result of low energy electrons emitted from the fresh metal surface (Kramer effect). For copper and the fatty acid (HFA) the following course of the reaction was suggested:

$$\tfrac{1}{2}\ Cu \rightarrow \tfrac{1}{2}\ Cu^{++} + e^-$$
$$e^- + HFA \rightarrow FA^- + \tfrac{1}{2}\ H_2 \quad (11)$$
$$FA^- + \tfrac{1}{2}\ Cu^{++} \rightarrow \tfrac{1}{2}\ Cu(FA)_2$$

The free energy changes, ΔF, for this adsorption and those for several metals were:

Metal	$\Delta F_{298}°$ kcal/mole
Ag	18.48
Cu	6.70
Fe	1.6
Pb	1.28
Co	—3.2

As is apparent from the free energy magnitudes, metals less electropositive than silver (gold, platinum, etc.) do not form a full monolayer, while those more electropositive do so more completely.

The heats of adsorption of a series of organic compounds from cetane on a platinum surface were of the following order (11):

Compound	Heat of Adsorption kcal/mole
C_{18} OH	10.7—11.2
C_{19} COOH	10.1
C_{18} amine·HCO_3	12.4—14.2
C_{18} amide	14.3

Observations (54) of monolayers of cerotic acid on glass and platinum surfaces when evaporated under vacuum showed that the film existed in patches and that evaporation occurred at patch edges. It was established that the energy binding value of the COOH group of the acid for platinum was 6 kcal, the same value as the binding energy of the cerotic acid film on glass, while the total binding energy for platinum was 20 kcal. The difference was more than accounted for by the difference in the adsorption energy of the COOH group for the two surfaces. This observation was taken as further substantiation of evaporation at patch perimeters, since the activation energy for evaporation is only a fraction of the energy for a molecule within a film, and only a fraction of the bonds are broken on evaporation. Zisman (11) showed that the desorption energy of molecules first leaving the film from platinum were much smaller than the heat of adsorption (14.5 kcal/mole).

The ability of a compound to ionize can strongly affect adsorbability at interfaces, particularly for metals (6). Acids, more basic amines and other polar molecules capable of ionizing at oil/water or metal/oil interfaces are 1000 times more adsorbable than the equivalent alcohols, esters, ketones, phenols or other polar molecules which

PART IV

cannot ionize. These differences were attributed to the ability of the H of the acid, or the N atom of the amine to coordinate with the electrons in the metal surface. Adsorption on platinum of lower molecular weight compounds result from electrostatic interaction between the molecular dipoles involved and the metal surface, but van der Waals cohesive forces between hydrocarbon chains cause significant increases in the total energy of adsorption for long chain compounds.

Table VIII. Heat of Adsorption on Steel from White Oil (31)

Adsorbate	△H (kcal/mole)
Oleic Acid	13.5
Stearic acid	13.0
Methyl stearate	8.6
Ethyl stearate	3.9
n-Butyl stearate	3.2
n-Octadecyl stearate	4.9
Octadecyl chloride	14.5
Glycol distearate	10.5
Glyceryl tristearate	7.8

Summary

Energy of adsorption frequently decreases as additional layers are added, hence outer layers may be less energetically held.

Energy of immersion of Graphon in sodium dodecylbenzene sulfonate (NaDDBS) solutions was affected most by the addition of sodium tripolyphosphate, particularly near the cmc. The heat of immersion of Graphon in several surfactant solutions varied from 40 to 142 ergs/cm², DDBS varying from 73 to 120 depending upon surfactant purity. The heat of adsorption of this same compound on cotton at 38° and 2° averaged about 800 cal.

The sequestration of the calcium ion by polyphosphates gave free energy changes of −7.6 to −10.2 kcal/mole for tetra-sodium pyro- to longer chain polyphosphates.

The van der Waals and chemisorptive energies for a number of metal substrates and adsorbates have been developed. For nickel the van der Waals heats of adsorption were −12 to −13 kcal/mole for stearic acid and octadecanol respectively. For chemisorption of n-nonadecanoic acid, metals less electropositive than silver did not form complete monolayers, while for silver the $\triangle F_{298}°$ was 18.48 kcal/mole, down to cobalt at −3.2 kcal/mole. On platinum, octadecanol had a heat of adsorption of 10.4 to 11.2 kcal/mole. Considerable adsorption data for metals exist, but for detergent systems the general data are scarce.

Cohesion and Adhesion

Considerable knowledge of the energy conditions in a detergent system may be attained through measurement of surface and interfacial tension values and contact angle. The energy characteristics of a liquid are perhaps the easiest to assess, as at least nine methods for measurement of surface tension have been used. As interfacial tensions are also readily measured, liquid/liquid systems have been the subject of many investigations. However, surface tensions of solids are much more difficult to determine, and less direct methods are employed for the purpose, such as measurement of contact angles.

The relationship between surface tension and free surface energy is a simple one. Harkins (42) showed that surface tension in dynes/cm is equal to work (energy) in ergs/cm². The surface tension (free surface energy) of a liquid decreases with a rise in temperature as a nearly linear function

$$\gamma = A - KT \qquad (12)$$

Decrease in surface tension of a liquid per degree of temperature numerically equals the entropy of the surface per unit area (for unassociated liquids 0.12 dynes/cm).

The total energy "u" of a surface is comprised of the sum of the free energy "γ" and the latent heat

$$u = \gamma - T\frac{d\gamma}{dT} \qquad (13)$$

In surface formation, a portion of the energy comes from work to give free surface energy, and another portion from the kinetic energy of the molecules themselves.

High free surface energies of the order of several thousand to several hundred ergs/cm² are found for high melting solids such as diamond, sapphire, silica, and some metals. Low melting solids such as organic polymers, waxes, and covalent compounds in general have free surface energies from 100 to 25 ergs/cm², or less (29). The presence of adsorbed molecules on high energy solids generally alters their surface characteristics with respect to liquids, giving them the same low energy characteristics as a solid of the same surface constitution. The surface energy in ergs/cm² of several paraffinic surfaces were (73): paraffin oil, 30.0 at 20°C; paraffin grease, 31.0 at 45°C; pure paraffin wax, 32.0 at 54°C; liquid paraffin/water, 56.0.

Work of cohesion (of water for water, for example) is that of pulling a bar of unit cross section apart, and for liquids, the *work of cohesion* is:

$$W_C = 2\gamma \qquad (14)$$

Table IX. Water and Various Liquids (43)

Comparison of work of cohesion (W_C) with work of adhesion (W_A) to water — 20°C.

Type of Compound	Ergs/cm² W_C	Ergs/cm² W_A
Paraffins	37-45	36-48
Alcohols	45-50	92-97
Ethyl mercaptan	43.6	68.5
Methyl ketones	ca. 50	85-90
Acids	51-57	90-100
Nitriles	ca. 55	ca. 90

For water this is twice the free surface energy or 72.8 x 2 = 145.60 ergs/cm². Harkins' (42) illustration indicated that a considerable tensile strength existed, since molecular attraction remained appreciable at small distances of the order of molecular dimensions. This attraction decreased as a moderately high power of distance. In an ex-

(*Turn to Page* 104)

"... But only God can make a tree."
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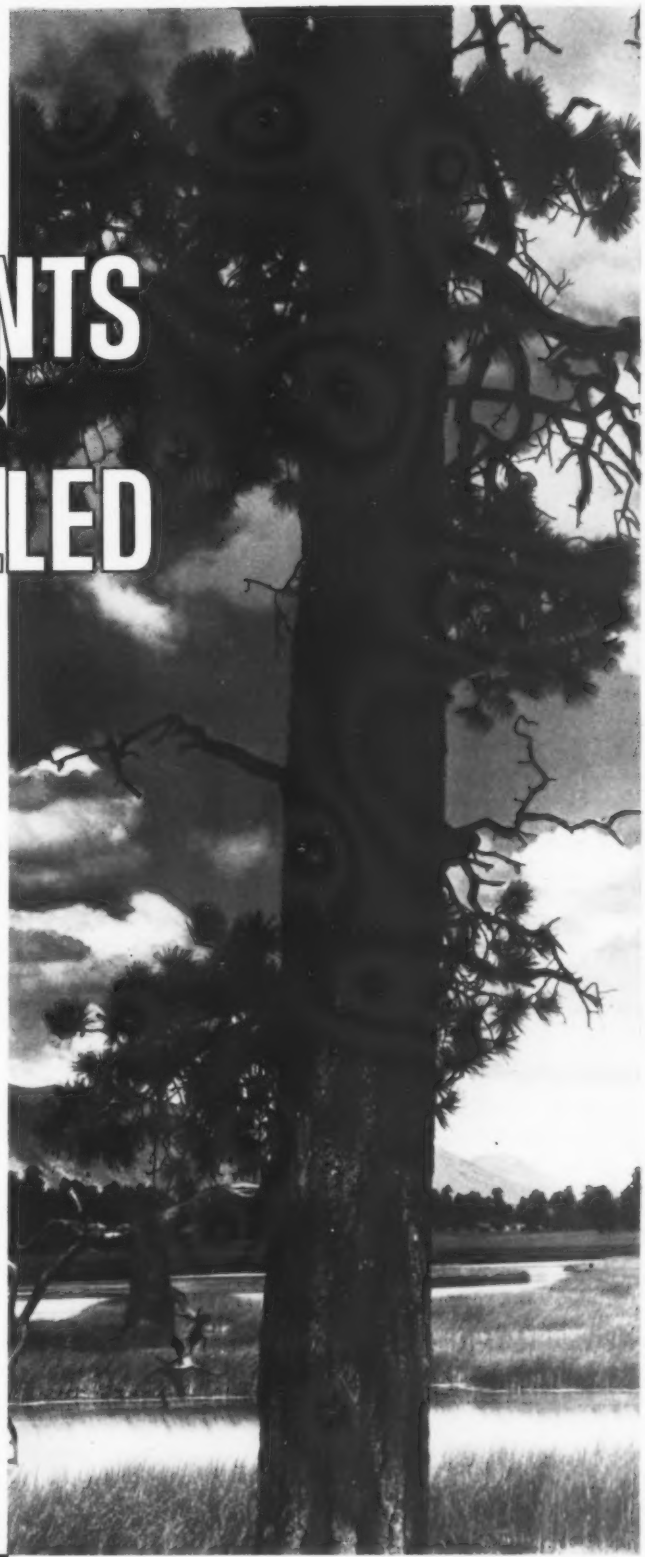

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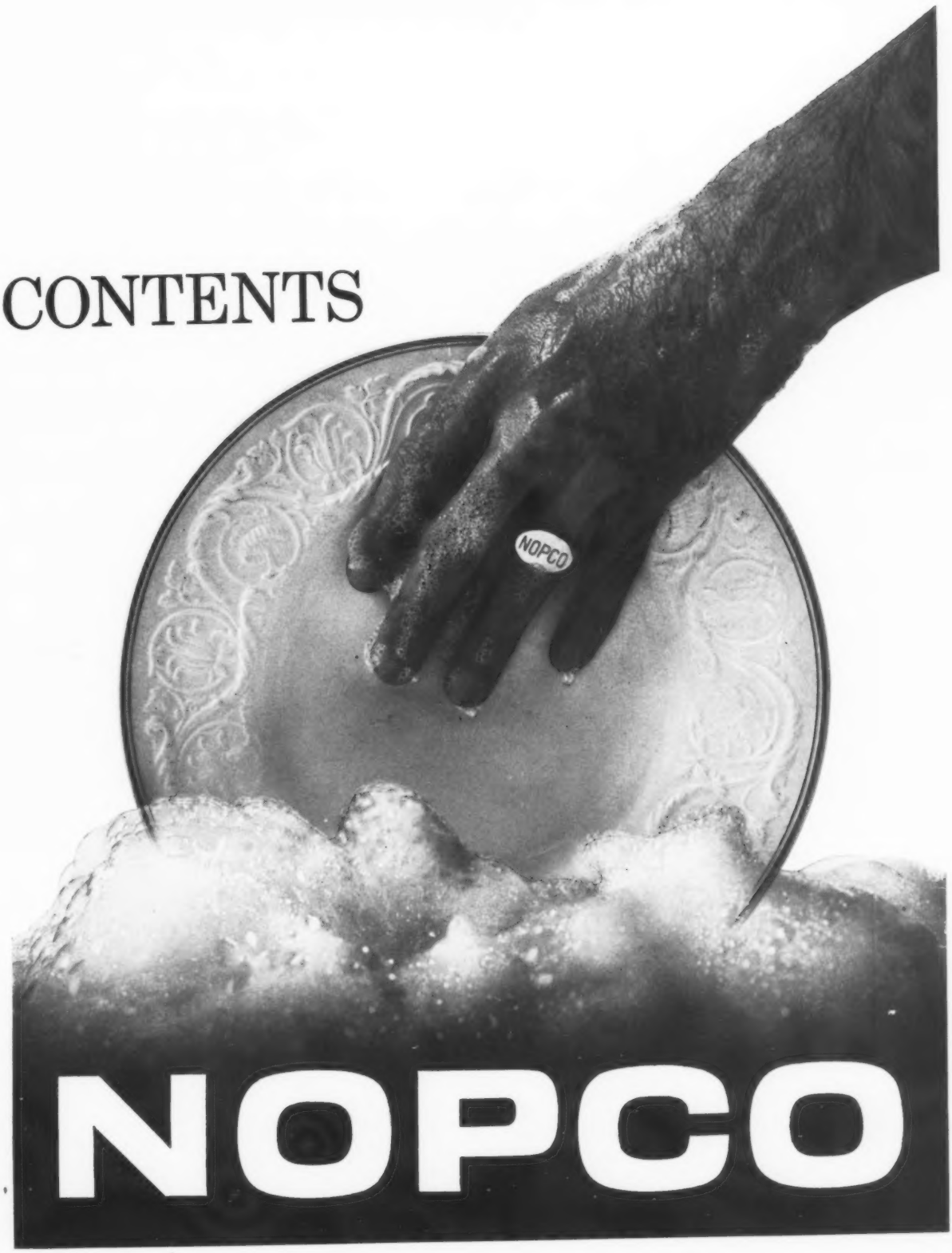

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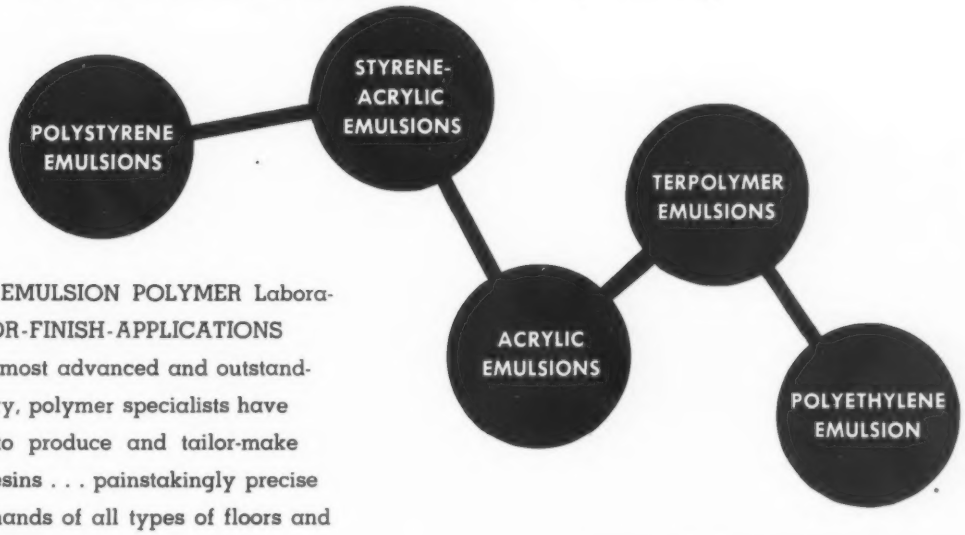

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Purpose: This compilation prepared by John D. Conner and Robert L. Ackerly, CSMA counsel. It brings together in one volume laws and regulations of especial interest to manufacturers, packers and sellers of insecticides, fungicides, disinfectants, rodenticides, sanitizers and many related products. To replace former small volume which should now be discarded as obsolete.

Description: Printed on bond paper, 8½ x 11; looseleaf in heavy duty, three-ring, leatherette binder so yearly additions and revisions may be included. Equipped with subject dividers and index tabs. About 500 pages.

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A. A. Mulliken
Secretary

CHEMICAL SPECIALTIES MFRS. ASSOCIATION — FOUNDED CSMA 1914

Chemical Specialties Manufacturers Association, Inc.

50 East 41st Street — **New York 17, N. Y.**

Charles E. Beach, President
H. W. Hamilton, Executive Vice-president — *Charles E. Allderdice, 1st Vice Pres.*
Donald Templeton, 2nd Vice Pres. — *Frederick G. Lodes, Treasurer*
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Epolene E	2500	1500	0.938	2
Epolene HDE	1500	455	0.956	1
Epolene LVE	1500	400	0.939	5
Epolene N	2500	2500	0.928	1
Epolene HD	1500	340	0.938	0.5
Epolene LV	1500	360	0.925	3
Epolene C	7000	16,000	0.907	7

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FDA Hearing on Labeling

Unanimous opposition to proposed regulations for enforcing Hazardous Substances Labeling Act voiced at hearing for oral statements on July 13-14. CSMA asks for extension of enforcement date to Feb. 1, 1963

UNANIMOUS opposition to proposed regulations for the enforcement of the Federal Hazardous Substances Labeling Act was expressed by industry representatives and their trade associations at hearings for oral presentation in Washington, D. C., last month. Conducted by the Food and Drug Administration, which is charged with the enforcement of the act, the hearings were held July 13-14.

Speaking for the Chemical Specialties Manufacturers Association, Charles E. Beach, CSMA president, and vice-president and general manager of John C. Stalfort & Sons, Inc., Baltimore contract and private label packagers, criticized the proposed regulations as "a radical departure from principles adopted and applied by other Federal agencies and by state authorities." Mr. Beach's presentation supplemented a written statement of CSMA's views on the proposed regulations dated June 28.

In outlining why the chemical specialties industry opposes the proposed regulations, Mr. Beach stated that the experience of the Federal government and more than 40 states which require precautionary labeling on pesticides has been "ignored." The record of the Federal and state laws has been one of uniform and effective precautionary labeling, he said.

Mr. Beach called for more "adequate" time for FDA to digest comments and consider their application before redrafting the proposed regulations. He also suggested that it may be "desirable to publish the redraft of the regulations again in a proposed or tentative form rather than as final regulations which would not permit further industry participation.

FDA's ultimate goal is consistent with that of chemical specialties manufacturers, Mr. Beach declared. He added that "our experience and the experience in related fields should not be ignored and that an arbitrary departure from established principles is neither justified nor necessary." He also asked for "continued full and complete discussion of this subject" with FDA.

Chemical specialties are "neither the major nor the primary cause of injury and illness to children," Mr. Beach reminded FDA. "Therefore, to overlabel products which play an admittedly minor role in this picture will invite greater indifference and carelessness in handling those substances which cause the majority of accidents. We sincerely believe that this is not in the best interest of public health and consumer safety," the CSMA president pointed out.

Charles E. Beach,
Speaks for CSMA

Mr. Beach also touched on the problem of product liability which manufacturers face. He requested FDA to be "reasonable" and not to "seek economic forfeiture of products on the market when the regulations become effective." He explained that it is "not desirable for regulations and the law to be in effect until there has been a reasonable opportunity to comply." Unless this compliance period is established, according to Mr. Beach, manufacturers not in full compliance with the regulations face the possibility of a court finding of negligence *per se*. This would permit a jury to assess damages against the manufacturer because the label was not in full compliance, Mr. Beach explained. He termed it "essential" to industry that FDA's authority be extended by Congress to permit a further extension of time to and including February 1, 1963.

On what may be expected of precautionary labeling, Mr. Beach pointed out that "education of responsible people to the risk of injury or illness which may result from careless exposure of children to the products under consideration is the most we can hope to accomplish by proper precautionary labeling." Mr. Beach added that "no one has yet devised a foolproof method of handling and storing containers in the household which would make them in-

accessible to the inquisitive, exploring youngster. Parents must be warned to use special care in handling and storing these products where there is a risk of substantial harm. While the protection of children should be obvious, experience shows that apparently it is not. Experience also shows that products subject to the Caustic Poison Act are still being handled carelessly in some homes, in spite of the drastic labeling on their containers. Good precautionary labeling plays only a contributory part in keeping such incidents at a minimum."

The CSMA president also explained that it is "needless to stress that our companies have no desire to see people harmed by the use of their products. And, can I remind you that a manufacturer's common law liability would quickly eliminate from the market any hazardous product not appropriately labeled."

Presiding at the hearing was FDA Commissioner George Larrick, who was flanked by William W. Goodrich, legal counsel for FDA, and John L. Harvey, deputy commissioner of Food and Drugs. In opening the session July 13, Mr. Larrick told the close to 200 persons attending the hearing that they were "all here to help us formulate ground rules for enforcement of the Hazardous Substances Labeling Act." Mr. Larrick recalled that FDA has had 33 years experience with hazardous substances. His agency was charged with the enforcement of the Federal Caustic Poison Act which was passed in 1927, he said. He also expressed confidence that "much good had been done" by the passage of the Caustic Poison Act, and that "lives had been saved and injuries avoided" by it. With the advance in technology, there has been an "increase in accidents and thus the need for regulations covering other products," Commissioner Larrick stated. "Several areas of the law needed clarification and implementation," Mr. Larrick said.

As to the proposed regulations for the Hazardous Substances Labeling Act, Mr. Larrick stated that "certain proposals are not to the liking of several industries and segments of industry. This is not surprising," he said, adding that "several consumer groups and individual consumers approved" the proposed regulations.

He concluded by stating that "we (FDA) do not profess to know all there is to know about hazardous substances."

MCA's Stand

First to make an oral presentation was Gen. John W. Hull, president of the Manufacturing Chemists' Association. After briefly reviewing the activity of his organization with regard to precautionary labeling, Gen. Hull declared that the "regulations as proposed will hinder rather than help in effective administration of the Act." He termed the proposed regulations "over-restrictive and impracticable, especially where certain testing provisions have been set forth." Gen. Hull also stated that "many of the provisions of the regulations are inconsistent with the Act itself and are contrary to the intent of Congress . . ."

He further criticized the proposed regulations as resulting in "extensive and most serious over-labeling of household products." He defined "over-labeling" as "the use of precautionary labels on products which do not need them and precautionary texts which are too strong and do not accurately reflect the hazards of the products."

In his opening remarks, Gen. Hull declared that the Manufacturing Chemists' Association was, and is, strongly in favor of the Federal Hazardous Substances Labeling Act.

"Let us make no mistake about this (overlabeling)", Gen. Hull stated. "If the housewife sees precautionary labels on most household products, or labels with statements which exaggerate the hazards of the products, it will not be long before the inevitable result will be a complete disregard of such precautionary information, thereby defeating the very purpose of this desirable legislation."

Gen. Hull also criticized the proposed regulations as "difficult to interpret in a number of respects." He cited as "an important example" the section defining 'containers intended or suitable for household use.' "From our study of the legislative history of the Act," said Gen. Hull, "we believe that this phrase means, 'common household products.' However, due to the vagueness in this definition as set forth in the proposed regulations, many of our members are unable to determine whether their products are actually covered."

As to matters such as type size, location, etc. for warning statements, Gen. Hull said MCA feels that "the Food and Drug Administration should carefully balance the equities involved in the requirements which the proposed regulations are designed to meet. On the one hand, the user needs to have the precautionary information effectively called to his attention. On the other hand, the label of a product must serve a number of purposes in a very limited amount of space. The label must identify the product, carry directions for use, and help to sell it. We believe the Food and Drug Administration, by the proposed regulations, has overlooked these latter factors. There is a serious need, in our opinion, for redrafting this portion of the regulations along the lines we suggested in our brief."

Gen. Hull also requested the Food and Drug Administration to include in the regulations a provision to provide for the transitional period to "enable manufacturers to complete distribution of existing stocks on hand and to prepare necessary changes in their labels and containers. This is in addition to the fact that the regulations need to be made less restrictive and more practicable."

Appearing on behalf of the Association of American Soap & Glycerine Producers, New York, was Dr. Bernard L. Oser, president and director of Food and Drug Research Laboratories, Inc., Maspeth, N. Y. Dr. Oser directed the bulk of his oral presentation to taking issue with the Food and Drug Administration's "establishing test procedures by fiat" in the proposed regulations. He pointed out that " . . . it would be both desirable and consistent with former policy to allow greater freedom of choice of testing procedures for the evaluation of at least those characteristics of the substances such as toxicity or irritancy, not specifically defined by Congress."

"Toxicologists generally prefer to have some degree of latitude in applying test procedures," Dr. Oser stated, supporting a similar view expressed by V. K. Rowe of Dow Chemical Co. "They (toxicologists) prefer to exercise a reasonable degree of choice of procedures when alternatives permit equally sound conclusions, and to employ test procedures which simulate to some degree the conditions of use of exposure."

"This principle," according to Dr. Oser, "has been recognized in regulations under the food and color additive sections of the Federal Food, Drug, and Cosmetic Act which provide that the Commissioner will be guided by principles and procedures for establishing the safety of food additives stated (or provided) in current publications of the National Academy of Sciences-National Research Council. However, they further declare that petitions will not be denied if they are based on procedures other than those outlined in these publications provided they give equally reliable results. Despite the fact that Congress, in its wisdom, has statutorily defined highly toxic substances in terms of somewhat sketchily described animal tests, it would be both desirable and consistent with former policy to allow greater freedom of choice of testing procedures for the evaluation of at least those characteristics of the substances such as toxicity or irritancy, not specifically defined by Congress."

Dr. Oser also pointed out that in the Act "a hazardous substance is defined in terms of two criteria, first, the type of hazard (viz. toxic, corrosive, irritant, etc.) and second, 'the probability that such substance or mixtures of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use including reasonably foreseeable ingestion by children.' Thus, cognizance is taken of the distinction between toxic and hazardous substances, and in this way Congress, with great foresight, established two separate but equal requirements by ascertaining whether a substance is hazardous to the extent requiring precautionary labeling. (In other words, a non-hazardous substance may be one that is either non-toxic, non-corrosive, etc. or one that is toxic, corrosive, etc., but is unlikely to cause substantial injury or illness under conditions of use.) That degrees of hazard are recognized in the Act is evident from the distinction made in the first requirement between 'highly toxic' and 'toxic' substance and in the second requirement where the characterization is made of resultant injury or illness as 'substantial' ".

NEW modified regulations for the enforcement of the Hazardous Substances Labeling Act were announced by the Food and Drug Administration and published in the Federal Register of August 12. According to one observer familiar with the regulations, FDA has made a number of important compromises. Required type size for signal words has been scaled down from 30 point. Although the warning statement is required to be on the main panel, details may appear on other panels.

"If these dinstinctions are clearly understood," Dr. Oser stated, "the tendency toward excessive use of precautionary labeling could be avoided without sacrifice of the important public safety advantages to be derived from the proper use of such labeling. I feel it is necessary to emphasize this point because many individuals and companies in the regulated industries are assuming that every product must be subjected to animal tests for toxicity, irritancy, etc., irrespective of the conditions of use and whether the history of use, which in many cases represents millions of packages over long periods of time, suggests the probability that substantial injury or illness may reasonably be expected to result. That is not to belittle the necessity for appropriate testing when such likelihood exists."

Dr. Oser also questioned dosage limits which define toxic substances. The five gram per kilogram of body weight dosage standard is "quite excessive and would unquestionably lead to overlabeling," according to Dr. Oser. Instead he recommended establishing a 10-fold dosage ratio between highly toxic and toxic substances, i.e.., "a critical dose of 50 mg per kg for the former and 500 mg per kg (or at most 1 gram per kg) for the latter."

The listing of certain solvents as "highly toxic on the basis of available data on human experience" raises the "question of whether this means mixtures of these solvents alone, or mixtures or compositions containing any amount of them." Dr. Oser further pointed out that "accidental ingestion of low concentrations of these solvents can be without significant effect." Whether or not solvents are highly toxic depends entirely upon the concentrations or amounts ingested, he said. "The regulations should reflect the fact that liquids might be swallowed in fairly large amounts relative to solids or pastes. Certainly it would seem that the presence of kerosene in an automobile wax would not justify regarding it as a highly toxic substance."

BUTONATE . . .

A new phosphate insecticide of low mammalian toxicity for household and industrial uses

By Robert D. Sharp*,
Prentiss Drug and Chemical Co.
New York

BUTONATE is the proposed generic name for the insecticidal chemical compound 0,0-dimethyl 2,2,2-trichloro-1-n-butyryloxyethyl phosphonate. Butonate was developed by Drs J. E. Casida and B. W. Arthur at the Department of Entomology, University of Wisconsin. Patents covering the invention have been issued to the Wisconsin Alumni Research Foundation under U. S. Patent Numbers 2,927,881 and 2,911,435. Prentiss Drug & Chemical Co., Inc. has been licensed to manufacture and distribute butonate.

Technical butonate is a colorless, somewhat oily liquid having a weight of 11.5 pounds per gallon and a specific gravity of 1.3742. Butonate has a slight ester-odor and is stable to light and in natural or acidic aqueous solutions. Rapid thermal decomposition occurs at a temperature of 150° C. and the compound is unstable in aqueous alkali. Butonate is readily miscible with most organic solvents, including the aromatic group, benzene, hexane, xylene, toluene, acetone, ethanol, methanol, and methyl cellosolve. Deodorized kerosene will hold approximately 2-3% by weight butonate. Compatibility tests to date show butonate is generally compatible with most non-alkaline insecticides and fungicides.

One of the most interesting and desirable advantages of butonate is its low mammalian toxicity. Radio-tracer studies have shown that the low mammalian toxicity is attributable to rapid debutyrla-

* Paper presented during 47th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1961.

Table I. Summary of Butonate Toxicity Data

1. Acute exposure
   Oral LD_{50}=1,100—1,600 mg/kg
   Subcutaneous LD_{50}—700 mg/kg
   Intraperitoneal LD_{50}—700 mg/kg
   Dermal LD_{50}=7,000 mg/kg
   Inhalation toxicity: No effect at an average exposure of mg/cu. ft. at 10 min. intervals for 8 hours

Table II. Summary of Butonate Toxicity Data

2. Subacute oral exposure

0.0625% in diet:	Slight cholinesterase effect (87% in erythrocytes and 68% in brain)
0.25% in diet:	No effect except cholinesterase reduction (73% in erythrocytes and 52% in brain)
1.00% in diet:	Weight gain reduction (40-50% of control gains)
	Increases in organ weight/body weight ratios for liver, heart, kidneys and spleen.
	Decreased cholinesterase values (62% of control in plasma, 38% in erythrocytes and 51% in brain)

Table III. Offical Peet Grady Test
(Large Group Method)

% Conc.—w/w			Average % Knockdown			Average % Mortality	OTI	
Butonate	Pyrethrins	Pip. Butox.	3'	5'	10'	24 hrs	Dil.	Grade
—	OTI		89.2	92.6	96.3	35.9	—	—
—	0.02	0.05	85.9	91.5	97.1	66.0	+31.0	AA
0.4	0.02	0.05	81.5	91.2	98.1	96.6	+60.7	AA
0.8	0.02	0.05	85.5	91.4	97.9	97.8	+61.9	AA

Table IV. Residual Fly Test (Glass)

Residue Age	Mg. butonate per sq. ft.	Percent Knockdown 15 — 20 — 25			Percent Dead 24 hrs.
3 days	64	3	5	24	100
	128	5	32	74	100
1 week	64	0	0	2	47
	128	8	47	81	100
3 weeks	64	0	0	0	0
	128	1	13	88	100

tion and phosphate hydrolysis. Sizable oral doses are largely eliminated from the tissues of rats in a few days; butonate being destroyed primarily in the blood serum, liver, and in fatty tissues.

The data in Tables I and II are summarized from experiments with adult white rats of the Sprague-Dawley strain.

Butonate is a cholinesterase inhibitor. The inactivation of this essential enzyme in the insects, nerves results in paralysis and subsequent death. As in the case of other organic phosphate insecticides, atropine is antidotal.

To date, most biological test work has been done on household and industrial insects. Tables III to IX indicate some of the laboratory tests work to date:

Table IV shows butonate applied to glass panels at the rate of 64 and 128 mg. per square foot. The houseflies were exposed to the residues for 25 minutes. Results were taken at intervals of three days, one week and three weeks.

Butonate at the 64 mg. dosage falls off sharply at one week: however, at the 128 mg. level, excellent control was obtained at the end of three weeks.

Table V shows experiments against adult German cockroaches.

The results indicate the definite insecticidal activity of butonate at low levels of application.

Results of another test (Table VI) show similar results, however, on a percentage basis.

Residual German cockroach results in Table VII are an average of replicates on glass.

From the initial results, it is indicated that butonate at the 128 mg. dosage shows good activity for two to three weeks.

A similar test was conducted on plywood panels and glass using an oil solution, emulsifiable concentrate and wettable powder. Results appear in Table VIII.

Adult roaches were exposed to panels in a free choice test for 72 hours. Each test consisted of two replicates of 10 German cockroaches per replicate.

The house fly aerosol test (Table IX) was conducted using a formulation consisting of 1.5% butonate, 0.2% pyrethrins, 0.5% Piperonyl Butoxide, 12.8% petroleum distillates — balance propellant and 5% methylene chloride. Results are an average of five replicates.

In addition to laboratory

(Turn To Page 108)

Table V. CSMA Official Cockroach Spray Method
Dosage 0.4 ml.
Grams/100 ml.

Pyrethrins	Piperonyl Butoxide	Butonate	% Mortality 48 hrs.
.05	—	0.4	83
.05	—	0.8	91
.05	—	—	57
.04	0.1	0.4	95
.04	0.1	0.8	100
.04	0.1	—	68
.10 (OTI)	—	—	82

Table VI. CSMA Official Cockroach Spray Test Method
Dosage 0.4 ml.

% conc. w/w Butonate	Pyrethrins	Average % Dead & Moribund 24 hrs	48 hrs.
	OTI	85	86
0.4	—	81	87
0.8	—	96	97
1.2	—	100	100

Table VII. Residual Test with Butonate on Glass

Residue Age	Butonate mg./sq. ft.	% Mortality 24 hrs.	48 hrs.	72 hrs.
2 days	64	53	55	60
	128	100	100	100
1 week	64	3	3	3
	128	100	100	100
3 weeks	64	0	0	0
	128	73	75	75

Table VIII. Residual German Cockroach Test
(200 mg. per sq. ft.)

Treatment	Type Surface	Average Per Cent Mortality — Hours Exposure Residue Age 1 Week 24	48	72	Residue Age 3 Weeks 24	48	72
Butonate emulsifiable	Glass	100	100	100	65	90	95
	Plywood	70	100	100	40	85	100
Butonate oil soluble	Glass	100	100	100	10	35	55
	Plywood	85	100	100	45	90	100
Butonate wettable powder	Glass	70	100	100	85	95	100
	Plywood	100	100	100	100	100	100
Untreated	Glass	0	0	0	0	0	0
	Plywood	0	0	0	0	0	0

Table IX. Official Peet Grady Housefly Aerosol Test
(Large group method)

	Dosage Grms	% Knockdown 5 — 10 — 15			% Mortality 24 hrs. KD	Avg.
OTA	63	26	39	53	52	84
Butonate Sample	69	31	52	85	81	87

Hospital Germicides

Enforcement Activities with Hospital Germicides Under the Federal Insecticides, Fungicide and Rodenticide Act

By L. S. Stuart* and L. F. Ortenzio,
Pesticides Regulation Branch
Plant Pest Control Division

EARLY in 1958, USDA set up a special project to assign a higher priority to enforcement activities on hospital germicides. This step was based on increases in hospital infection rates by antibiotic resistant staphylococci reported in the medical literature; receipt of an increasing volume of inquiries from hospitals requesting information on disinfectants; and evident public alarm over the staphylococcal disease problem. Public concern was reflected by many newspaper articles and feature reports in popular magazines.

In the registration program initiated in 1947, products in this class had been assigned a category code which involved the minimal requirement that all products recommended specifically for hospital applications be effective, used as directed, against both gram negative enteric bacteria and gram positive pyogenic organisms. In line with this requirement, the Bacteriological Section was routinely testing all regulatory samples of these products to determine compliance. The A.O.A.C. Use-Dilution Method (1) and the two test organisms *Salmonella choleraesuis* and *Staphylococcus aureus* were used in this work.

In a special investigation on hospital germicides the established laboratory routine was checked to determine if it could be relied upon to reflect deficiencies against the various strains of antibiotic resistant staphylococci implicated in the most recent hospital epidemics reported.

Twenty-one strains were obtained which were of phage type 42B/47C/52/80/81 resistant to aureomycin, dihydrostreptomycin and penicillin as judged by low concentration "Difco" disc test. These strains had been recently isolated from hospitals by the Department of Health of the State of Ohio, from the Lancaster, Dayton, Cincinnati, Akron, Bryan and Coldwater areas. (2)

Upon receipt, 3 consecutive 24-hr. transfers in A.O.A.C. Nutrient Broth, with incubation at 37° C., were made with each strain. Resistance of these strains against the pure chemical phenol, a commercial synthetic phenol emulsion germicide, N. F. Saponated Solution of Cresol, a commercial 10% preparation of alkyl (C_{12},C_{14},C_{16}) dimethyl benzyl ammonium chloride and a commercial iodophor

Table 1. Susceptibility of Antibiotic Resistance Strains of Staphylococci to Samples of Commercial Contact Germicides

	Maximum 10' Killing Dilutions Phenol Coefficient Method				
Staph. aureus Strain Nos. FDA 209 ATCC 6538	Phenol* 1-60	Com. Synthetic Phenol Emulsion 1-200	N.F.Sap. Soln. Cresol 1-78	Com. 10% Quaternary 1-1800	Com. Iodophor 1-750
981	1-65	1-246	1-78	1-1650	1-990
4973	1-75	1-350	1-120	1-5750	1-1130
5200	1-65	1-222	1-78	1-3000	1-950
6026	1-70	1-245	1-70	1-2000	1-950
6039	1-75	1-300	1-125	1-2000	1-900
6697	1-75	1-245	1-147	1-2000	1-950
1257	1-60	1-252	1-83	1-2450	1-950
1258	1-70	1-276	1-70	1-2000	1-1120
1279	1-60	1-252	1-70	1-2500	1-1090
1290	1-50	1-150	1-40	1-5000	1-1100
1291	1-75	1-500	1-296	1-2500	1-825
1295	1-80	1-500	1-296	1-1800	1-1250
S58	1-70	1-300	1-124	1-1850	1-800
S65	1-60	1-315	1-85	1-2250	1-950
S69	1-65	1-300	1-130	1-2000	1-950
S71	1-65	1-325	1-130	1-2100	1-1025
S74	1-65	1-345	1-130	1-3000	1-600
1209	1-60	1-255	1-130	1-2000	1-900
L81L	1-70	1-450	1-92	1-1500	1-1000
L70L	1-60	1-246	1-98	1-2000	1-800
L71L	1-65	1-345	1-98	1-2500	1-1150

*Lowest killing dilution found in 4 trials or highest resistance shown

*Paper presented at 47th midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 16, 1961.

preparation was then compared to resistance exhibited by the standard strain of *Staphylococcus aureus* F.D.A. 209, ATCC 6538. The comparison was made by the Phenol Coefficient or dilution tube (1) procedure. Results are listed in Table 1.

Results in Table 1 show that only strain 1290 of the (2) antibiotic resistant organisms was more resistant to phenol than the standard test strain FDA 209, ATCC 6538. Eleven others exhibited resistance equivalent to that specified in A.O.A.C. Methods for the stock test strain. Ten had resistances lower than that specified for this strain. Against all five test germicides the standard test strain showed the most uniform pattern of high resistance.

Among the 21 antibiotic resistant strains some rather weird patterns of resistances and susceptibilities were encountered. This might have been anticipated if resistance to antibiotics is associated with mutations involving genetic and/or physiological changes in the cell as has been alleged (3) (4) (5) (6). For example, strain 1290 which was somewhat more resistant to phenol than the standard test organism was also more resistant to the commercial synthetic phenol emulsion and the N.F. Saponated Solution of Cresol. However, it had a much lower resistance to the quaternary ammonium germicide and the iodophor.

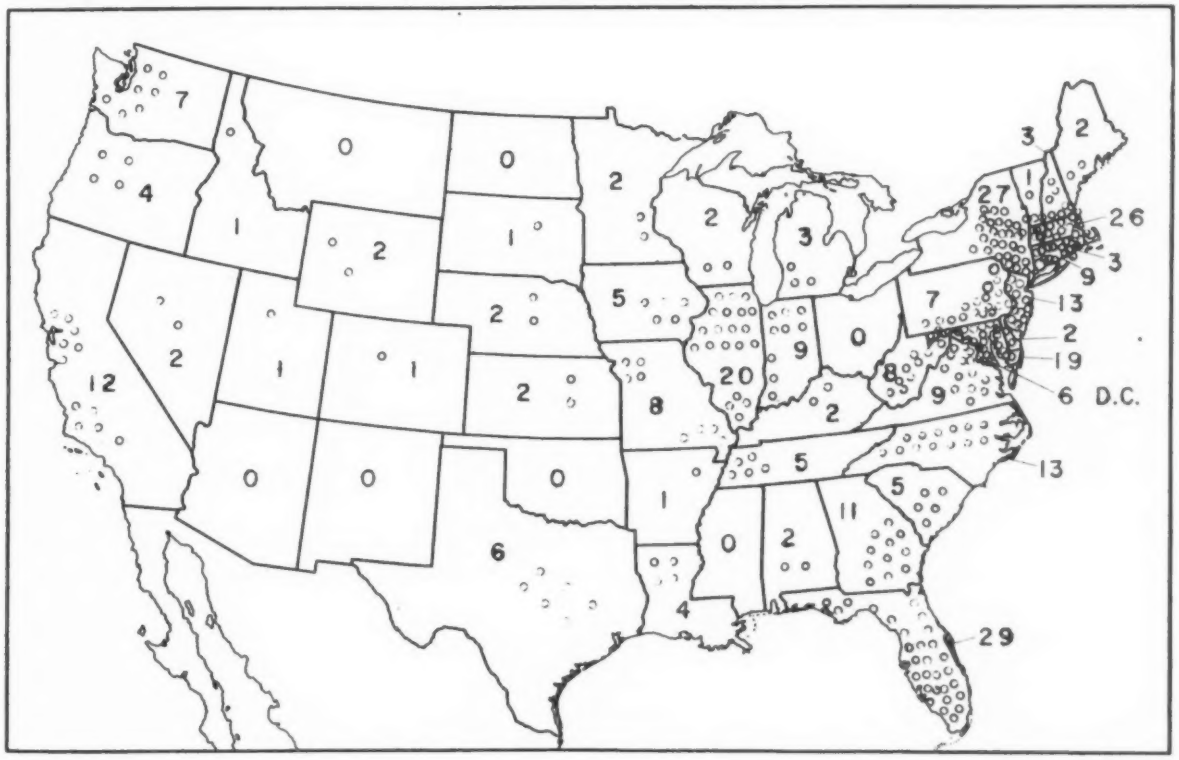
Only one strain, S74, showed greater resistance to the iodophor than the standard test strain but this organism was much less resistant to the quaternary preparation, the N.F. Saponated Solution of Cresol and the commercial synthetic phenol emulsion. To make the matter more confusing, S74 exhibited resistance to phenol within the limits specified for the standard test strain.

Two strains, 981 and L81L, were more resistant to the test quaternary than the standard test strain. However, their resistance to the iodophor and the synthetic phenol emulsion was significantly lower than that of the standard test organisms.

The very wide variations in resistances shown by the 21 antibiotic resistant strains to the individual samples of the four commercially available germicides present a rather startling picture when compared to the variation in resistance to the pure chemical phenol. This can best be illustrated by listing the killing dilution ranges for phenol and each commercial germicide. With phenol the dilution range was from 1-50 to 1-80, with the N. F. Saponated Solution of Cresol the range was from 1-40 to 1-296, with the synthetic phenol emulsion from 1-150 to 1-500, with the quaternary from 1-1500 to 1-5750 and with the iodophor from 1-600 to 1-1250.

Due to these wide variations, the simple expedient of strain selection will enable a manufacturer to produce apparently valid evidence in support of an application for registration of a contact germicide labeled to claim effectiveness against antibiotic resistant staphylococci. The data in Table 1 also suggest that unjusti-

Figure 1. Geographic distribution of hospitals visited.



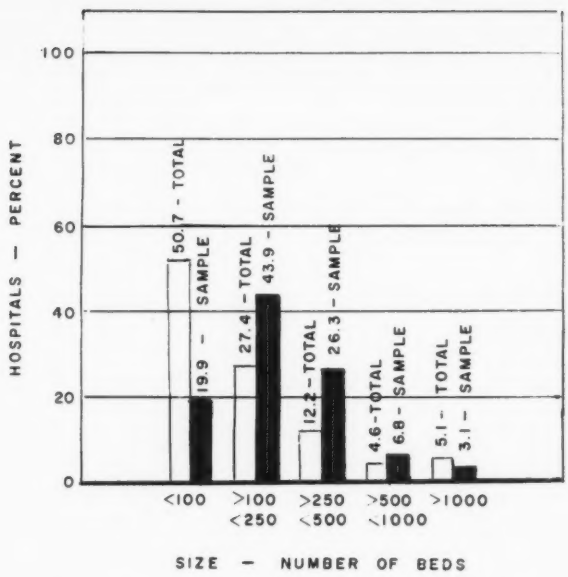
fied conclusions may result from tests of contact germicides if a selected antibiotic resistant strain is used to replace F.D.A. 209, ATCC 6538. This is true even if the replacement has the phenol resistance specified in the A.O.A.C. Methods. This practice of substitution has become quite common. It contributes to confusion and the Department considers it misleading and unacceptable.

On the basis of these findings it appears that a germicide's effectiveness against F.D.A. 209, ATCC 6538 in regulatory testing should provide adequate assurance of effectiveness against antibiotic resistant staphylococci likely to be encountered. Furthermore, results with this test organism in appropriate procedures should provide an accurate index to lack of effectiveness against antibiotic resistant organisms in actual hospital applications.

The second step in these investigations was the collection of germicide samples directly from hospitals. Estimates received from individuals in the trade early in 1958 indicated that 80 to 90 per cent of all products in this class are probably shipped directly from the manufacturer to the hospital or ultimate consumer. In such instances, there would be no possibility of detecting violations of the law, unless the investigator collected a sample from the consignee. A fairly large number of hospital visits by field inspectors seemed necessary to determine how important the sampling of products at such outlets would be to the enforcement program. Directions were therefore given to all investigators to collect certain other information which might also aid in developing improved procedures for administering the law as it pertains to this class of commodities.

Between April 15, 1958 and April 15, 1961 292 hospitals were visited. Studies of the samples collected during these visits and of the investigators' reports provide a volume of interesting information. The 292 hospitals visited represented only a 4.2% sampling of the 6,845 hospitals located within the area covered (7). The significance of the information developed can only be judged by the degree to which this sampling is representative of conditions as a whole.

Figure 2.



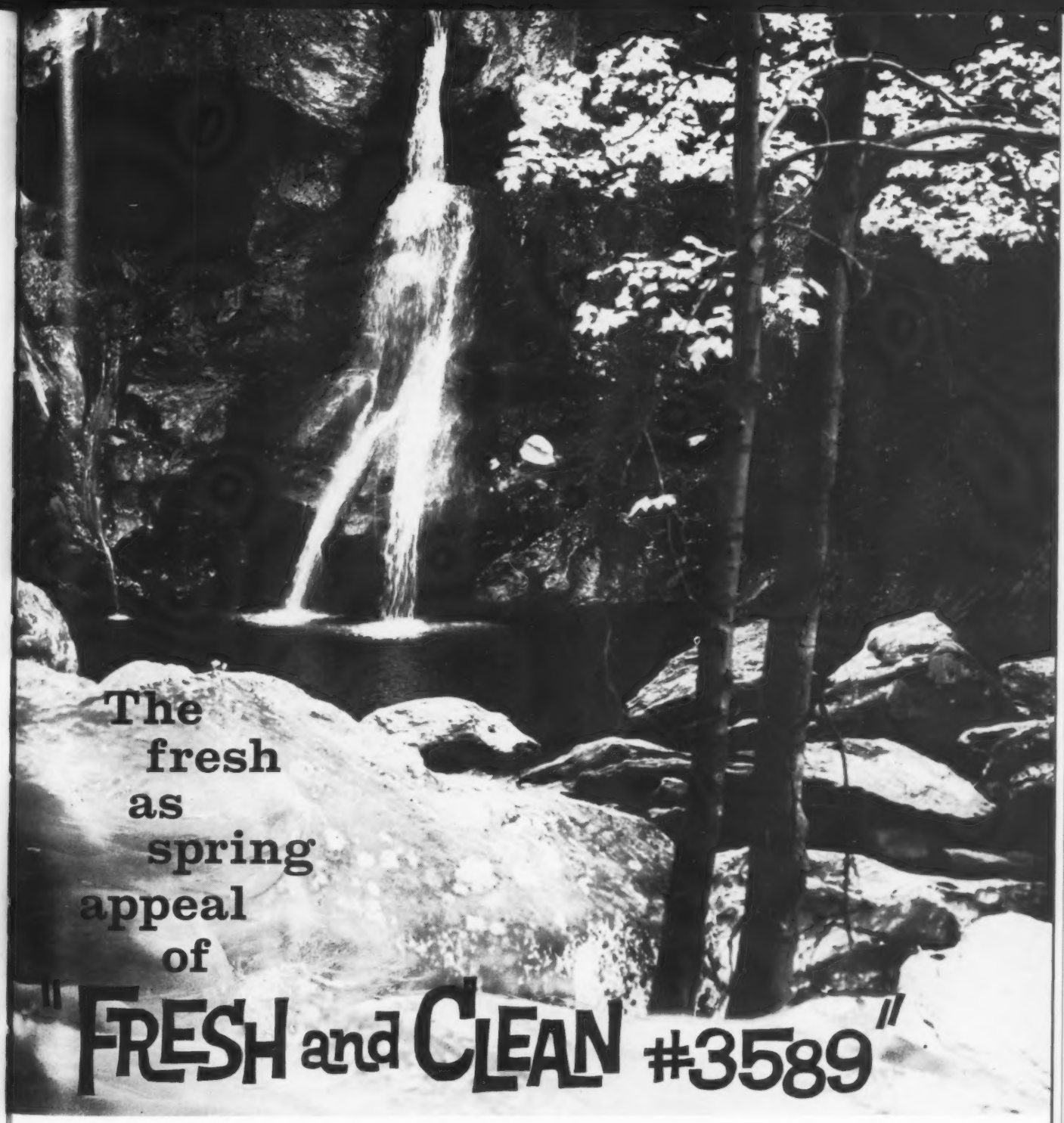
The sample obtained is considered sufficiently representative —both from the standpoint of geographic distribution and of hospital size—to provide indicative figures. However, it has certain limitations which should be recognized.

The geographic distribution of the hospitals visited is shown in Figure 1. In general, the visits were concentrated in the more densely populated areas of the northeastern part of the country. However, no hospital visits were made in Ohio, Mississippi, Oklahoma, North Dakota, Montana, Arizona or New Mexico. From a population distribution standpoint, the most serious deficiency appears to be failure to obtain more samples in the heavily populated Michigan, Ohio, Western Pennsylvania and Western New York districts. This omission was due primarily to a vacancy on the staff of field investigators.

Distribution by size of hospitals in the sampling area and extent of sampling in each hospital category are shown in Fig. 2. Whereas 50.7 per cent of the hospitals within the sampling area contained less than 100 beds, only 19.9 per cent of the investigators' visits were made to hospitals of this area. Fig. 2. also shows that 5.1 per cent of the hospitals within the area contained more than 1,000 beds, whereas only 3.1 per cent of the hospitals visited were in this group. Thus, the sampling of the small and very large hospitals cannot be considered adequate. On the other hand the sampling of hospital groups ranging in size from 100 to 1000 beds would seem to be adequate.

Of the germicides sampled in these 292 hospitals over a three-year period, 62.4 per cent were shipped directly from the factory to the hospital, and 37.6 per cent were delivered from local distributors or hospital supply companies. The 62.4 per cent figure is considerably lower than the trade estimates, mentioned above. In view of the relatively few visits to small hospitals which might be expected to purchase from local jobbers the figure may still be too high for hospitals in general. Nevertheless, it indicates clearly that 50 per cent or more of the violations in this class of products would be likely to go undetected if the Department enforcement program did not in-

(*Turn to Page* 104)



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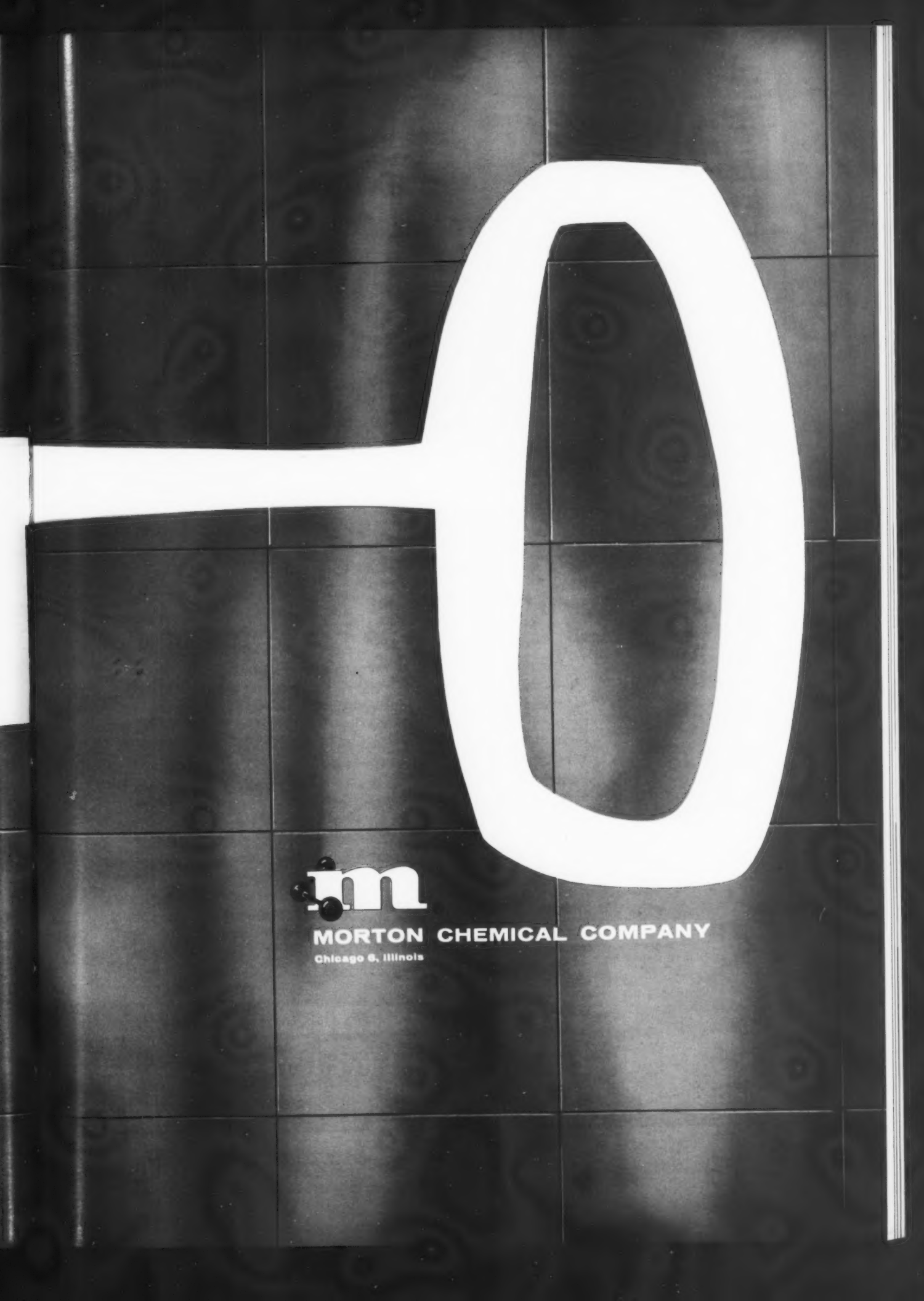
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Slippage on Waxed Floors

Legal principles of liability resulting from slippage on waxed floors and analysis of controlling facts against which these principles are normally applied.

By John D. Conner*,
Cummings and Sellers,
Washington, D. C.

THIS paper concerns itself with a discussion of the legal principles which determine liability or nonliability in wax slippage cases, and to an analysis of the controlling facts against which these principles are normally applied. My task will be to develop the applicable legal principles and in doing so point up the factual issues around which these issues normally revolve in such slippage cases.

In the September issue of *Soap & Chemical Specialties*, Dr. J. V. Steinle will examine these legal principles and factual issues through the eyes of the scientific expert, suggest the type evidence which is responsive to these issues, and, I trust, as is the custom with an expert witness, express an opinion on whatever other questions may perchance come within the orbit of his scrutiny.

The tenor of the program will be technical. The legal discussion will be by way of prologue — to set the stage for discussion by an expert witness of technical issues.

I have always been impressed by the preciseness with which a scientist approaches his task and reduces the problem in hand.

I, as a lawyer, have always been impressed by the conciseness with which Graham reduced the law of gaseous diffusion to the simple formula

$$\frac{R_1}{R_2} = \frac{D_2}{D_1},$$

that Mr. Charles stated the law of the effect of temperatures on the volume of gas in terms of the simple formula

$$\frac{V_1}{V_2} = \frac{T_1}{T_2},$$

and the preciseness with which Mr. Boyle stated the law of the effect of the pressure on the volume of gas to the equation

$$\frac{V_1}{V_2} = \frac{P_2}{P_1}.$$

Accordingly, in keeping with the spirit of the occasion, I set about to reduce the law of liability in wax slippage cases to such a formula. Unfortunately, I must report failure to do so. The law of liability defies any such precise approach.

First let me define as concisely as possible the subject of investigation. We first will examine and develop the legal principles which govern liability or lack of liability when a person slips on the floor owned or controlled by another and as a result is injured. We then will determine the factual issues which normally are involved in the determination of liability or nonliability.

First let me emphasize that the legal principles governing liability or nonliability in wax slippage cases are the same as those applicable to any other liability cases. There is no liability or nonliability in wax slippage cases that is distinctive from liability or nonliability in other matters.

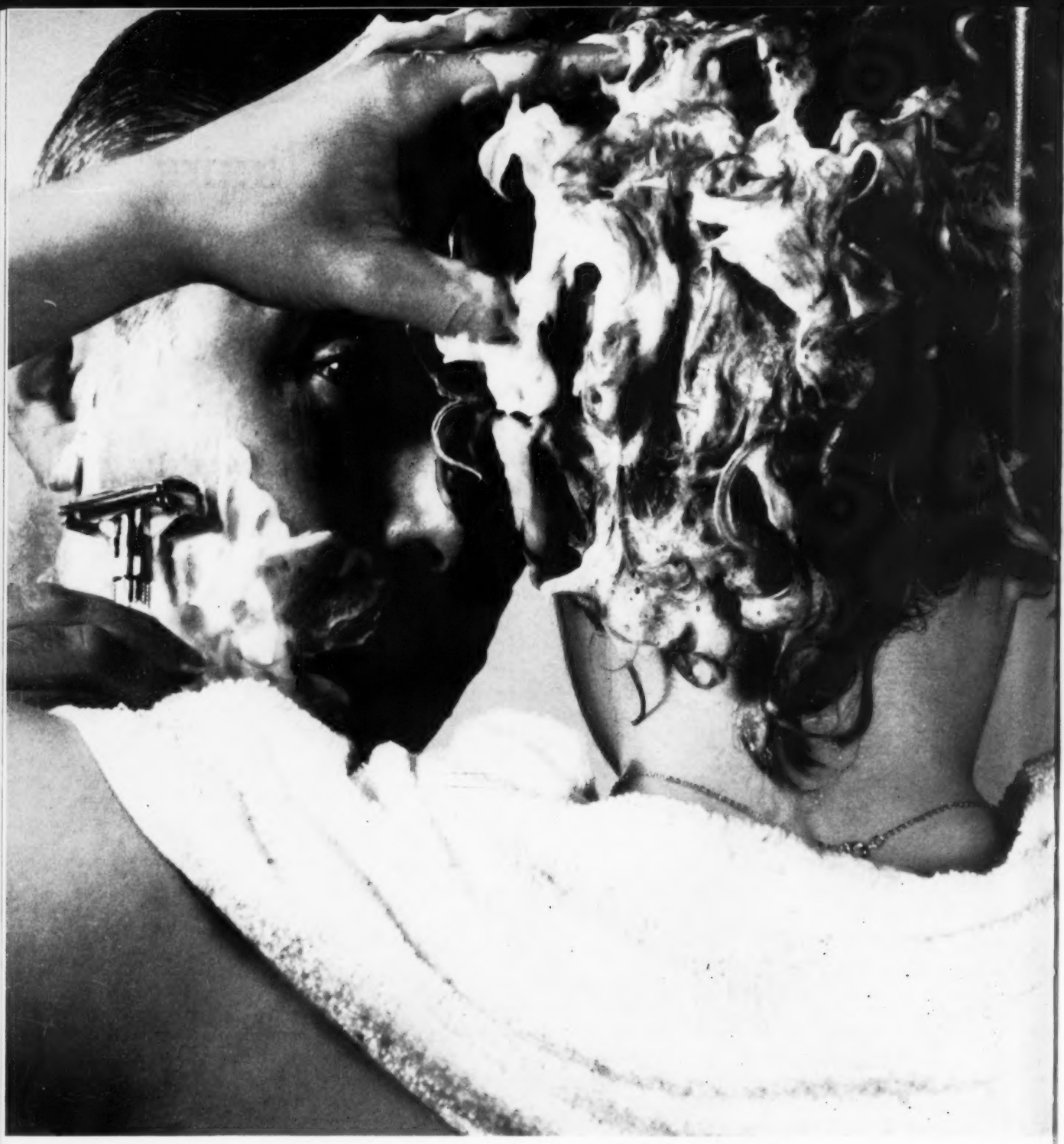
Any owner of occupant of premises has a duty or obligation to members of the public who have occasion to use those premises. The standard of care is measured by the status of the person who happens to be on the premises.

The highest degree of care is owed to those individuals whom the law classifies as "invitees." An invitee is one who comes upon the premises at the express or implied invitation of the owner or occupant. The fact that a person who enters upon the premises of another does so at the invitation of the owner or occupant gives him a more favored position than that to which one who enters by the mere sufferance of the owner or occupant is entitled.

The second class of persons who may be on premises are generally referred to as "licensees." A licensee is defined as a person who enters upon the property of another for his own convenience, pleasure or benefit.

The third class of person,

* Paper presented during 47th midyear meeting, Chemical Specialties Manufacturers Association, Chicago, May 16, 1961. Mr. Conner's firm is legal counsel for CSMA.



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the trespasser, is one who enters the premises of another without license, invitation or other right.

The Invitee

Although the standard of care which an owner or occupier of premises will owe to each of these classes of persons will differ widely, we will address our consideration of the standard of care to that owed the first class of persons, the invitee. It is this standard of care which an owner or occupier of premises should understand and be prepared to meet.

The legal obligation to an invitee is normally stated in terms similar to those used by the Supreme Court of Pennsylvania in the case of *Weir* v. *Bond Clothes, Inc.*, 198 A 196.

"* * * All the authorities agree that it is incumbent upon the owners of the premises upon which persons come by invitations, express or implied, to maintain such premises in a reasonably safe condition for contemplated uses thereon and the purposes for which the invitation was so extended."

This standard of care is owed by the owner or occupant to protect against any type of injury which might normally be expected to arise from the use of the premises whether it might result from a foreign substance on the floor, faulty design in the floor, lack of adequate lighting, or by a state of disrepair.

Safe Maintenance

It is clear from even a cursory examination of this standard of care that it imposes an affirmative duty on the owner or occupant of the premises to maintain his floor in a safe and sound condition. This standard cannot be met by disregard, by allowing foreign substances to accumulate on the floor, by allowing it to fall into a state of disrepair, or by permitting it to become dingy or poorly lighted. The standard imposes an obligation of proper maintenance. Waxing floors long has had an accepted place in meeting this obligation of proper maintenance and at the same time in meeting the desire of the property owner to maintain the premises in an attractive condition.

What are the legal implications of waxing a floor? Does it create a liability separate or distinct from that general obligation of the owner or occupier of premises to maintain the premises in a sound condition? It has been generally accepted by the courts that waxing the floors of premises does not within itself create any liability. Possibly a few excerpts from typical decisions will best illustrate this principle.

In *Bonawit* v. *Sisters of Charity of St. Vincent's Hospital*, the court stated:

"An owner in treating a floor may use wax or oil or other substance in the customary manner without incurring liability to one who slips or falls down, unless the owner is negligent in the materials he uses or in the manner of applying them. If a recovery is to be had something more must appear than that the floor has had such treatment as is ordinarily applied in the care of floors. * * * The duty of the owners is to exercise ordinary care for the safety of those who have occasion to walk on the floor, and that duty is not shown to have been violated by merely oiling or waxing and polishing a floor in the usual way, although the floor was rendered slippery thereby." 182 N.E. 661, 662.

In *Frazier* v. *Mace-Ryer Company*, the court stated the rule in these terms:

"The law has become well established in this state to the effect that owners and occupants of business houses, where people are invited for trade, have a right to have their floors waxed and polished, and only owe a duty of maintaining the floor in a reasonably safe condition for the purpose for which it is used."

It is only when the waxing may be done in a negligent manner that liability creeps in.

The Supreme Court of Oklahoma in a recent case drew the distinction in these terms:

"* * * A proprietor is not an insurer, and it is quite generally stated that it is not negligent to wax the floors of a business. Nevertheless, it may be negligence to wax the floors in such a fashion that they become dangerously slick or to wax so haphazardly that dangerously slick spots are left as a trap for the unwary."

Accordingly, an owner has the right to wax, beautify and protect his floors. Waxing itself does not constitute negligence. However, the waxing may be done in such a manner that it does constitute negligence — or what normally is referred to as common law negligence.

Common Law Negligance

Common law negligence in turn can be explained only on the basis of experience rather than logic.

Probably the best way to is to assume momentarily that you are a member of a jury trying a wax slippage case. The plaintiff has alleged that he has been injured because the wax was applied in a negligent manner and that this negligence in turn was the cause of his injury.

Just before the jury retires to consider its verdict it would be instructed by the judge on the law to be applied. The court's instruction on what constitutes common law would run something like this:

"I instruct you that negligence is the failure to observe for the protection of another's interest, such care and precaution as the circumstances justly demand, whereby injury is done such other person or his property. Or, to state it in another way, negligence is the failure to do what a reasonably prudent person would ordinarily have done, or the doing of what such a person would not have done under the circumstances of the situation whereby injury is done another."

You will note, in this instruction, the adoption of the test of the "reasonably prudent man" as the standard of care. It is sometimes stated as an obligation to use "reasonable care" not to injure others. This concept is firmly embedded in our common law. It does not impose upon a citizen the obligation of the insurer of the safety of another or of his property. It casts his obligation in terms of "reasonable care" or the degree of care which would be exercised by the "reasonably prudent man."

That the degree of care required of the ordinarily prudent man may vary under different cir-

(*Continued on Page* 91)

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(*Continued from Page* 87)

cumstances is well illustrated in an old English decision written by Lord Bramwell in discussing the question of how high a reasonably prudent man would build his fence to contain his pigs. Lord Bramwell made this scholarly observation:

"Nor do we lay down that there must be a fence so close and so strong that no pig could push through it, or so high that no horse or bullock could leap it. One could scarcely tell the limits of such a requirement, for the strength of swine is such that they would break through almost any fence, if there were a sufficient inducement on the other side. But the company are bound to put up such a fence that a pig not of a peculiarly wandering disposition nor any excessive temptation, will not get through it."

At this pointour investigation narrows down to determining those practices in connection with waxing floors which have in the past been found by the courts to constitute negligence or to constitute a violation of the standard of reasonable care. I should stress that this investigation centers around the practices which the courts or the juries have found in the past to constitute negligence. I, as a lawyer, would be the last to contend that the findings of a jury on technical issues are conclusive of the correctness of those issues. I cannot say that just because a jury has in the past found a prescribed factual situation to exist does not require that you accept as true that same factual situation. It does indicate, however, that a representative group of citizens at some time in the past have been persuaded to accept those facts as correct. It raises a presumption that in future instances another representative group of citizens would find the same way unless they are presented with expert testimony to convince them to the contrary.

I shall ask our "expert witness," Dr. J. Vernon Steinle, of S. C. Johnson and Son, Inc., Racine, Wis., to consider as a challenge any such past findings which he believes to be unsound and to indicate the type of testimony which he would present to convince them to the contrary.

Over-Application

Probably the practice which is most frequently alleged to have produced the dangerous condition is over-application, at least in spots. In some cases the evidence of over-application may consist of no more than testimony that the plaintiff noticed skid marks immediately after the fall. Usually, however, the testimony of over-application will be more convincing. It may be that the plaintiff noticed several small balls of wax in the area of the fall. In one typical instance the plaintiff testified that immediately after the fall she scraped the floor and found the coat of wax to be approximately 1/32nd of an inch thick.

It may be that our expert witness will tell you that a skid mark is not evidence of over-application. Nevertheless, frequently courts in the past have held that evidence of skid marks is sufficient evidence of over-application to permit a case to go to the jury. From that point on the jury is the sole judge of negligence. Accordingly, if skid marks are not signs of over-application, testimony explaining why it is not should be standard testimony in any wax case.

Wet Floors

Slippage on waxed floors which are not completely dry present another area of liability. Frequently the plaintiff's case will center around testimony that immediately after the fall wet wax was found on the floor, or on the body or clothing of the plaintiff. This in turn is usually considered sufficient evidence of negligence by the courts to permit such a case to go to the jury on the issue of negligence.

In other instances liability has been premised upon a finding that wax has been applied to areas where its presence would not reasonably be expected or where it is likely to be dangerous. Liability has been imposed because wax was applied to inclined surfaces, because it was applied at the end of matted areas subject to frequent use, because it was applied in dimly lighted areas where the presence of wax is likely to be undetected, and because it was applied to deformed areas of the floor.

In some instances liability has been imposed on the basis that the wrong type of wax was used for a specific purpose or because it was improperly applied. In one case liability was imposed upon a finding that the wax in question became soft and slippery when exposed to water. In other cases it was observed that certain waxes when applied with the brush tend to accumulate on parts of the floor, that wax applied on damp days may remain wet or soft for an unusually long time, that heavily applied wax on new floors tends to produce an unusually slippery condition, and that sweeping floors with a bristle broom may remove the non-slip properties of some waxes.

Any Waxing Negligent

Some courts appear to have evolved the theory that some types of floor materials are so hard that any waxing constitutes negligence, or that wax of necessity increases the slipperiness of a floor.

The leading case of this school is *Nicola et al.* v. *Pacific Gas and Electric Company*, 123 P. 2d 529. The floor of an office of the Pacific Gas and Electric Co. was made of a composition known as "Asrock." Testimony showed that the floor was waxed from time to time but there was no evidence to show that it was waxed in a negligent manner. The trial court found for the plaintiff primarily on the basis of evidence that a number of persons had slipped on the floor. In affirming this decision of the trial court, the Appellate Court stated:

"Appellant's argument goes further to assail the finding that the floor was maintained by defendant in a negligent manner, and they rely upon a rule, which has been followed by some courts in other jurisdictions, that the duty of an owner to exercise ordinary care is not violated by merely oiling or waxing and polishing the floor in the usual way

(*Turn to Page* 106)

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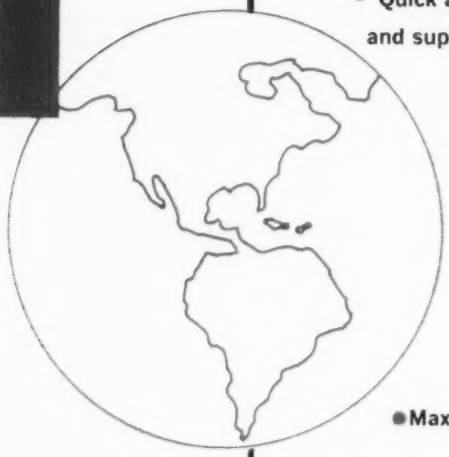

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Consumer's view of

Insecticide Marketing

By Andrew B. Meldrum,*
Meldrum and Fewsmith, Inc.
Cleveland, O.

HAVING said a few nice things about Boyle-Midway, we now turn to another of their products (Fig. 8). It has excellent distribution, and it is about as bad an example of packaging for self-service stores as I can imagine. The front of the package says nothing except that "'Antrol Ant Traps' Kill Both Sweet and Grease Eating Ants." When you read the back of the package for complete instructions, all you get is the antidote for poison. The instructions turn out to be on the back of each of the three cans . . . but you can't take a can out to read how it is supposed to be used without ruining the 3 for 49¢ package. You get a money back guarantee if it doesn't work, but if one does not work should you try the other two? Or send one back half full of ants? Are the ants really trapped? The consumer has now way of knowing.

Now *I* know. I talked to a hardware store owner who explained that this was one of the oldest and best known remedies for ants. He explained how it worked to my complete satisfaction. Ten years ago, five years ago, you could depend on somebody to help you at the point of sale. But in the years ahead, your package will have to tell the entire story.

Not all insecticide packages are modern looking. "Ant Buttons" (Fig. 9) almost tries to be old-fashioned . . . and maybe that's not too bad. It does say on the package how the product works: "'Ant Buttons' are cleaner, neater, more efficient to use than obnoxious, sickening, messy, wasteful sprays, liquids, pastes or powders which only reach the few insects they hit on the surface and do not bring lasting results (as ants die before they have a chance to take poisons to the nest and feed it to the Queen Ant, etc.) whereas, 'Ant Buttons' are different and a stomach food that worker ants carry to the Queen, young ants, breeders, eggs and food supply in the nest, thereby destroying the whole colony in the nest."

This is selling copy. It answers all three of a consumer's questions.

The "Terro" Ant Killer package (Fig. 10) is somewhat more modern looking. And this product has instructions that are simple and effective: "Place where ants are seen. At first they will come in large numbers, but soon will disappear. The ants carry Terro back to their dens, often eliminating the entire den." This makes sense, tells how the product works; tells the consumer what results to expect; and it happens to be easy to read. I bought it.

Talking about a man's package is like talking about his letterhead or his necktie . . . you're on

*Paper presented at 47th midyear meeting of Chemical Specialties Manufacturers Association, Chicago, May 17, 1961.

Figure 8

Figure 9

Figure 10

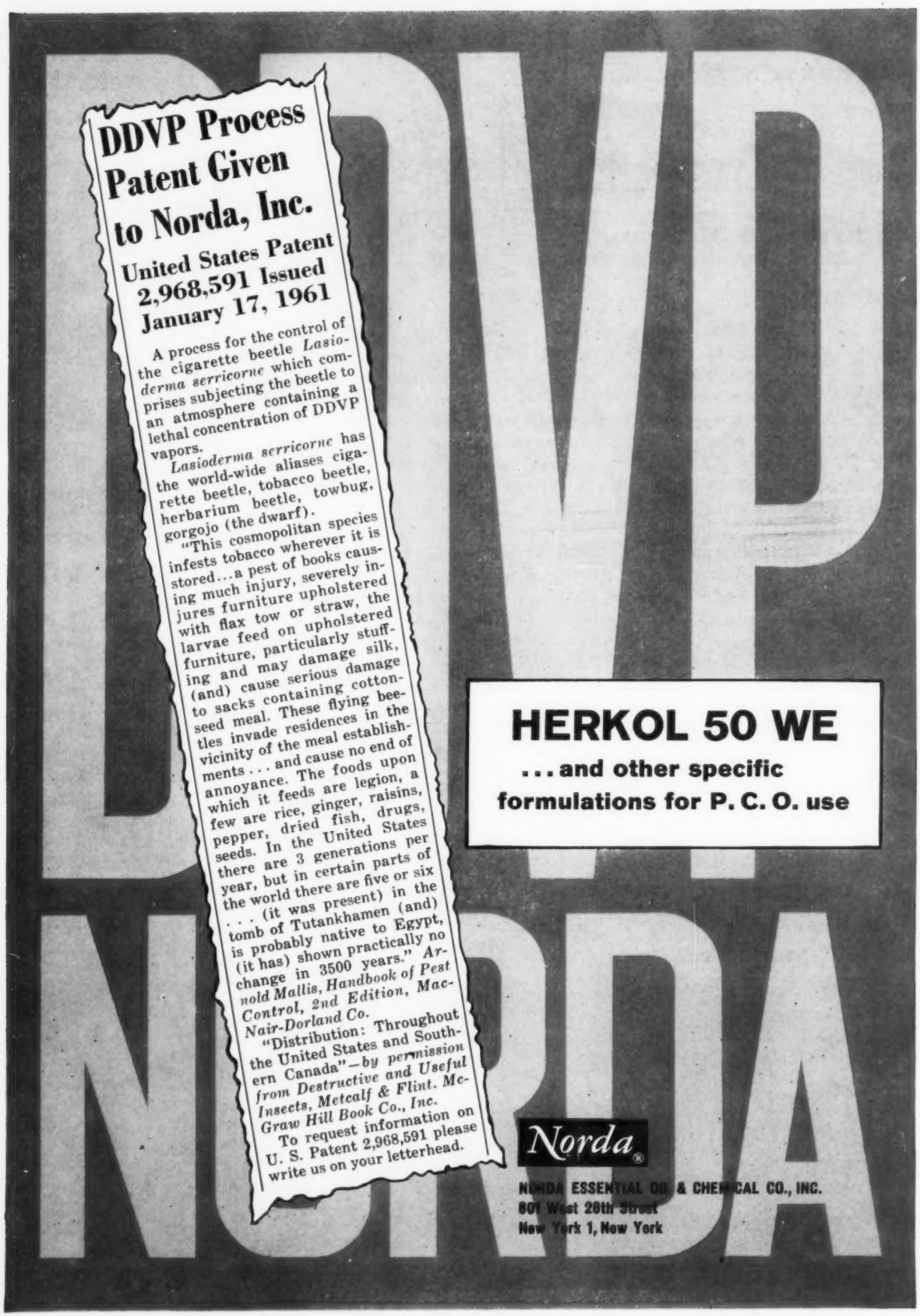
DDVP Process Patent Given to Norda, Inc.
United States Patent 2,968,591 Issued January 17, 1961
A process for the control of the cigarette beetle Lasioderma serricorne which comprises subjecting the beetle to an atmosphere containing a lethal concentration of DDVP vapors.
Lasioderma serricorne has the world-wide aliases cigarette beetle, tobacco beetle, herbarium beetle, towbug, gorgojo (the dwarf).
"This cosmopolitan species infests tobacco wherever it is stored...a pest of books causing much injury, severely injures furniture upholstered with flax tow or straw, the larvae feed on upholstered furniture, particularly stuffing and may damage silk, (and) cause serious damage to sacks containing cottonseed meal. These flying beetles invade residences in the vicinity of the meal establishments . . . and cause no end of annoyance. The foods upon which it feeds are legion, a few are rice, ginger, raisins, pepper, dried fish, drugs, seeds. In the United States there are 3 generations per year, but in certain parts of the world there are five or six . . . (it was present) in the tomb of Tutankhamen (and) (it has) shown practically no change in 3500 years." Arnold Mallis, Handbook of Pest Control, 2nd Edition, MacNair-Dorland Co.
"Distribution: Throughout the United States and Southern Canada"—by permission from Destructive and Useful Insects, Metcalf & Flint. McGraw Hill Book Co., Inc.
To request information on U. S. Patent 2,968,591 please write us on your letterhead.
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Figure 11

Figure 12

Figure 13

Figure 14

pretty dangerous ground. Certainly, a lot more thought has gone into insecticide packaging than I seem to give manufacturers credit for. But I am forced to wonder how much research has been done on what questions the consumer is asking while he's looking at a row of insecticides. In the case of "Kan-Kil" Bug Killer (Fig. 11), for example, is the consumer really concerned about the fragrance of the insecticide, as indicated on the top of the label? I just wonder if Colgate, with all the thousands and thousands of dollars they put into the research and development of this product, thoroughly researched what this package would do in a market as compared with one that had a different selling point at the top of the label.

In short, how many insecticide packages are designed to answer the key questions consumers have about the products? The package of 72% Chlordane (Fig. 12) for instance; does it tell the consumer what he wants to know?

In a talk presented at the CSMA midyear meeting in May 1960, Harry Haynes of Union Carbide Chemicals Co. said: "Closer naming of multipurpose products by association with use would remove some of the confusion in the consumer's mind." In other words, tell the consumer what he wants to know.

A package of 72% chlordane appears on the left in Fig 13, a "mocked up" label on the right. Actually, I simply picked up the headline from an advertisement on 72% chlordane . . .

Kill Crabgrass
Before It Can Start

With "Antrol" 72% Chlordane

Where the lines are indicated, the copy would read:

Most Effective Insecticide for
Preventing Crabgrass
Killing Ants, Grubs, All Lawn
Insects.

Although fully aware of the national advertising and promotion being done on chlordane, I still feel that most consumers — shopping at self-service stores — are going to learn more from the label on the right.

One question bound to be asked is "how can one put more complete information on the back of a can that's already too crowded, with print that's too small for easy reading." There are two answers. First, when one gets the detailed information and instructions ready for his next package, he should turn over the final job of writing to experts in writing, and in thinking like consumers. It looks to me as if even the biggest firms . . . tremendous marketers like DuPont and Esso and S. C. Johnson & Son . . . have turned over the job of writing the small print on the backs of insecticide packages (Fig. 14) to the advertising department. The result is a rewrite of what their competitors are saying. They are certainly not getting any original ideas, related to what consumers want to know.

Many companies smaller than the three I've just mentioned wouldn't hesitate a minute to spend $5,000 or $10,000 in product research, especially if they thought there was a way to improve their own product over a competitor's. They might consider offering their advertising agency $5,000 to do some consumer research on a package, and come back with a brand new approach to the instructions on the back of the can. They might be quite surprised, and ensuing sales results might surprise them even more.

There's a second and even more obvious answer to the problem. When you have a job of consumer education, and you can't get full instructions on the can, attach a little folder. Some chemical specialties manufacturers are thoroughly familiar with this technique. For instance, Johnson's "Holiday Wax" and Continental "Grip-Kote" (Fig. 15). Why not use the idea on insecticides, where you have an even more involved story to tell . . . and where there is more need for consumer education. An informative folder attached to, or hung around the neck of almost any insecticide can right now might have very interesting sales results.

We know such devices (Fig. 16) have increased sales for several of our own clients. Bonne Bell Cosmetics have described new products in detail . . . Durkee Famous Foods have given away interesting new recipes. While I'm talking about our own agency—we do one very interesting thing with Glidden . . .

Like many of the good things agencies do, it was the client's idea. To get closer to their customers, to get a better feel of

For some it is this: swell of sea, sweep of sky, sting of salt, boom of spray, and the sleek hull winging...a man's game in a fearnaught world. For others no less quick or bold, adventure comes in other challenges to mind and muscle. But to each of us, it carries its own cargo of sights and sounds and smells that move us and quicken our heartbeats in response and recognition. If you seek to pluck adventure from the air and put it in a flask or flacon, Givaudan can help you. No one knows more about the uses of fragrance, or its ever-changing fashions. And no one has helped so many searchers for a special, unique fragrance find their perfect answer. Givaudan-Delawanna, Inc., 321 West 44th St., New York 36

GIVAUDAN
First in the world of fragrance

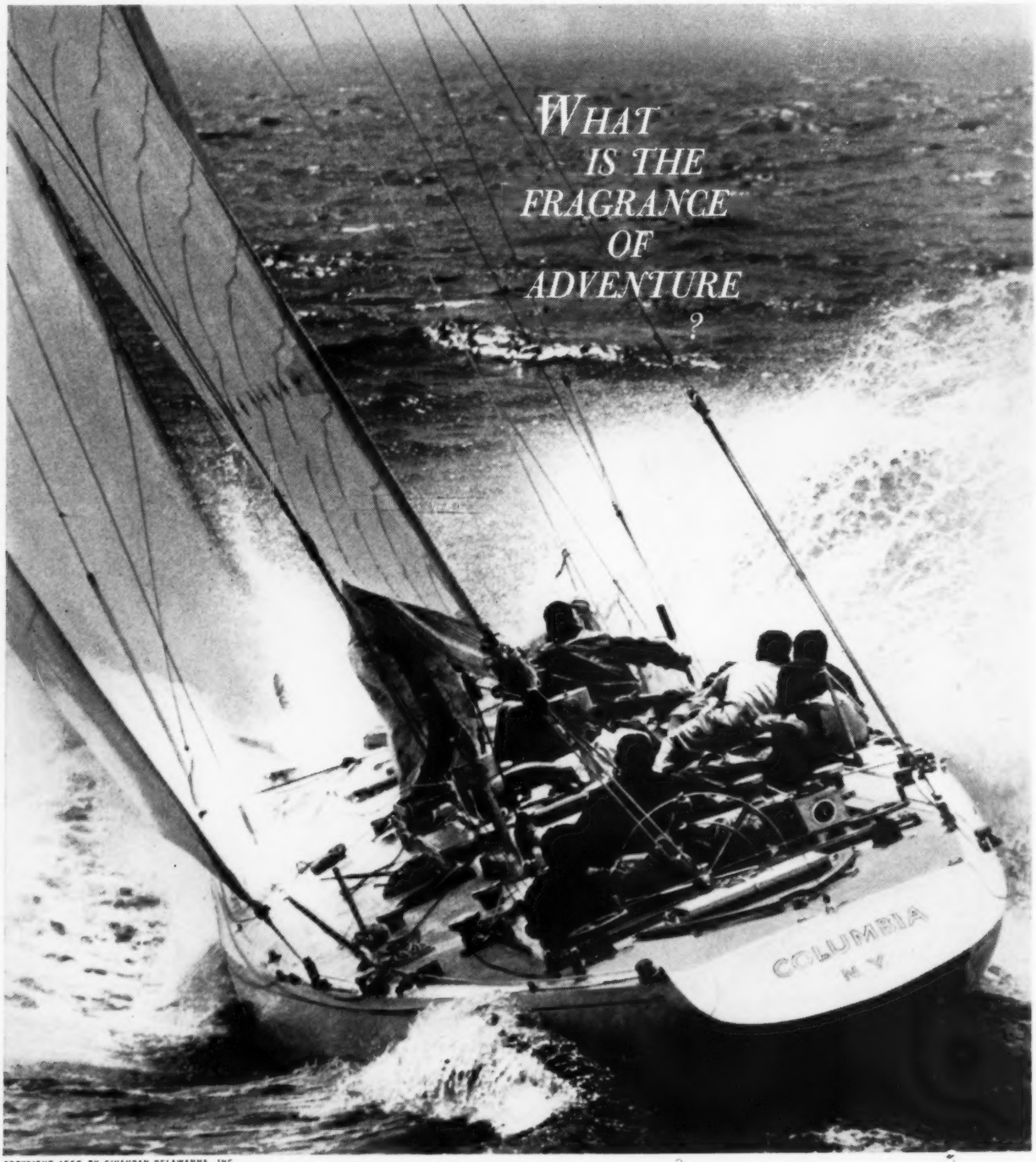

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Figure 15 (top), and Figure 16, (below).

consumer needs and the retailer's point of view, Glidden executives from the president on down spend one Saturday every year in a Glidden outlet. So do 15 people from our agency who work on the account in one way or another. We believe the result is better advertising, better retailing ideas, and better packages for self-service stores.

We have dealt with packaging, its growing importance at the point of sale and my conviction that each of your companies could afford to put more top level brains to work researching consumer questions about your products . . . then put more emphasis on having good creative people write the answers to their questions . . . to go on your packages.

I can't resist adding a few words about my favorite subject, advertising. I am flabbergasted at how little advertising there is on insecticides in magazines. A few of your largest companies are doing quite a bit on radio and in newspapers. But in magazines — almost nothing! And, we believe magazines are the most effective medium for telling a complicated story like that of insecticides . . . for getting people to read all about a product and decide where it might answer their particular needs. Take a magazine like *Better Homes and Gardens*, for instance. What better place to tell more than four million readers about a house and garden spray? Or *American Home?* Or *Good Housekeeping? House and Garden?* All devote practically all of their editorial to the problems of the home and garden. What better climate in which to tell the insecticide product story? Yet almost no insecticide advertisements could I find in the entire year of 1960 in any one of these excellent magazines . . . read for information every month by millions of men and women who have problems that these products are designed to answer.

The records show that during the entire year of 1960, in all five of these magazines . . . with a combined circulation of over 15 million families . . . only four companies advertised their insecticides.

I am not including the advertising on chlordane and malathion since they are industry-wide products, not a particular brand. Though, incidentally, even they did remarkably little in these five most logical magazines.

The total investment of all four companies on behalf of their own insecticides in all five magazines came to only $60,000. And the advertisements they ran were too small and too infrequent to do the job that needs to be done.

Space costs are a lot lower than one might think. Some marketers might be amazed at how little it would cost to run an entire campaign in one or two of these magazines. And there are other good magazines, of course.

Finally, one might ask, why is more insecticide advertising needed? Will more advertising mean more sales? Isn't the market pretty well saturated now?

Results of a 1960 Survey in Ten Key Markets across the country made in more than 20,000 personal interviews by Dan Clark Associates, Stanford, Cal. appear in Fig. 17.. In answer to the question, "have you bought any insecticide within the last 12 months," only 57% said "Yes." Other divisions of the Chemical Specialties Manufacturers Association are doing a far better marketing job, than the Insecticide Division.

Do I think there is an opportunity for increased sales of insecticides? I certainly do. And if there's any profit in insecticides . . . if it would mean anything to marketers to increase sales 10% or 20% . . . I'd suggest they put more emphasis on these three areas: Learning what questions consum-

SILICONE NEWS from Dow Corning

Polish up polish sales

Polishes with silicones go on easier, last longer, increase brand preference

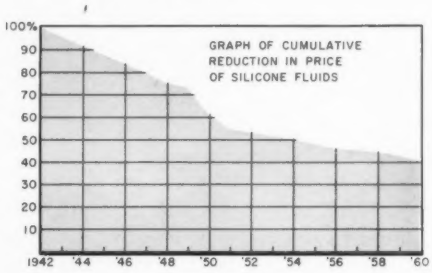
A gleaming table top, a shimmering car finish, a sparkling window . . . each indicates a satisfied customer. But there's more to making a polish popular than pleasing the eye. How easily does it go on? Will it resist time and weathering? Does it repel water and spotting? The right answers mean more sales. And when you have formulated your polishes with Dow Corning silicone fluids, they meet the test on every count.

Ease of application is a real customer pleaser, a time-saver they remember the next time they buy. With silicones in your polish, application is speedy; less rub-out is required. The polish spreads easier, resulting in faster formation of a better film.

Greater durability and beauty result from silicone formulation, too. No other ingredient can provide the same degree of oxidation resistance and water repellency . . . which means longer lasting beauty and protection for furniture, autos, glass and appliances.

You can get quick help in improving existing products or in readying new polishes for the market by drawing on the vast fund of data our chemists have compiled on the uses of silicones in polishes.

One final note to remember: people now recognize the better looking, more durable protection silicones provide. Take advantage of this growing awareness by putting "silicones" on the label. It will help polish up your polish sales.



Silicone fluids have shown a steady decrease in price while many of your costs have constantly increased.

Contact Dow Corning Corporation, Dept. A120, Midland, Michigan, for technical data or formulating recommendations on the use of silicones for finer polishes.

first in silicones

Dow Corning

ers have about their products; answering these questions on the packages; and more advertising in magazines.■

Detergent Testing

(*From Page* 58)

Table IV an estimate of the mildness of eighteen of the product pairs compared in the arm immersion test is presented on the basis of RAP data.

Water Transmission Test

The effect of various materials on the transmission of water through excised skin has been studied by Burch and Winsor (3), and Blank (4). Philip and Isherwood (5) have used the effect of various materials on the rate of water transmission on excised skin as a measure of product mildness.

An adaptation of their techniques has been used in our laboratories for the same purpose. The animals are exposed to the test product under conditions similar to those described in the RAP test. The excised skin is mounted on a diffusion chamber in which the dermal side of the skin is exposed to water and the epidermal side to the dry air of a dessicator. Water transmission rates are determined by weighing the chamber after 24 and 48 hours.

Although there is some variation in the water transmission rate depending on the type of animal used and the extent of its exposure to the test product, the ratio of the transmission rates of the two products remains remarkably constant under different testing procedures. Data on water vapor transmission ratio of several product pairs are presented in Table V.

Table IV. Repeat Animal Patch Test

Products Tested			RAP Scores	
A	B	Conc.	A	B
4	5	8%	0-1	0-1
6	7	8%	0-1	0
8	9	8%	0-1	1
3	10	8%	0	0-1
3	11	8%	0	1
6	11	8%	0-1	1
12	2	8%	0-1	0-1
3	13	8%	0	1-2
3	2	8%	0	0-1
6	14	8%	0-1	0
3	14	8%	0	0
8	14	8%	0-1	0-1
15	8	8%	0-1	0-1
3	4	8%	0	0-1
6	13	8%	0-1	1-2
6	2	8%	0-1	0-1
16	17	4%	0-1	0-1
		8%	0-1	3
18	1	2%		0-3
		4%	0-1	0-1
		6%	0-1	2-3
		8%	1-2	3
1	19	2%		0-1
		4%	0-1	1
		6%		3
		8%		4
20	21	4%	0	0
		6%	0-1	0-1
		8%	0-1	1
1	22	4%	0-1	2-3
23	17	4%	0-1	0-1
24	17	4%	0-1	0-1
18	25	6%	0-1	2
28	29	4%	0-1	1
		6%	4	4
30	31	4%	0-1	0
		6%	0-1	0-1
		12%	1	3
30	32	4%		0
		10%	0-1	0-1

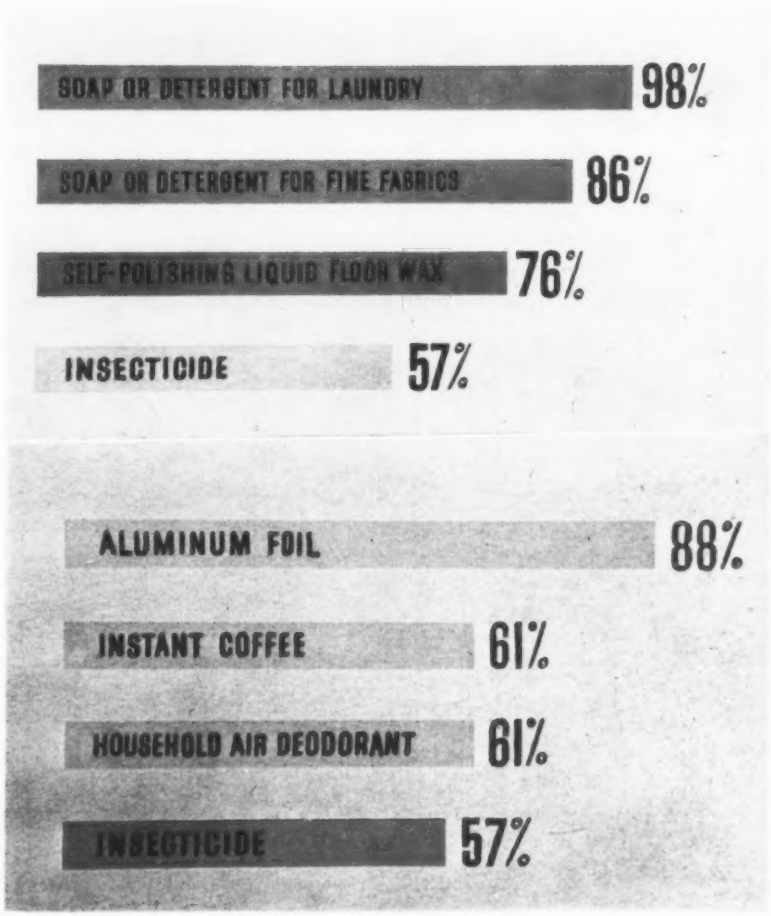


Figure 17, top, and Figure 16, below.

Correlation of Methods

In Table VI is tabulated a summary of data obtained to date using these several testing procedures.

Table V.
Water Transmission Test Results

Products Tested			Ratio of rates of transmission
A	B	Animal	A/B
3	13	Rat	.49, .53
3	2	Rabbit	.41
		Rat	.33
3	14	Rabbit	0.50
		Rat	0.38
15		Rat	1.0
6	13	Rat	.71
6	2	Rat	1.08
18	1	Rat	.76, .62

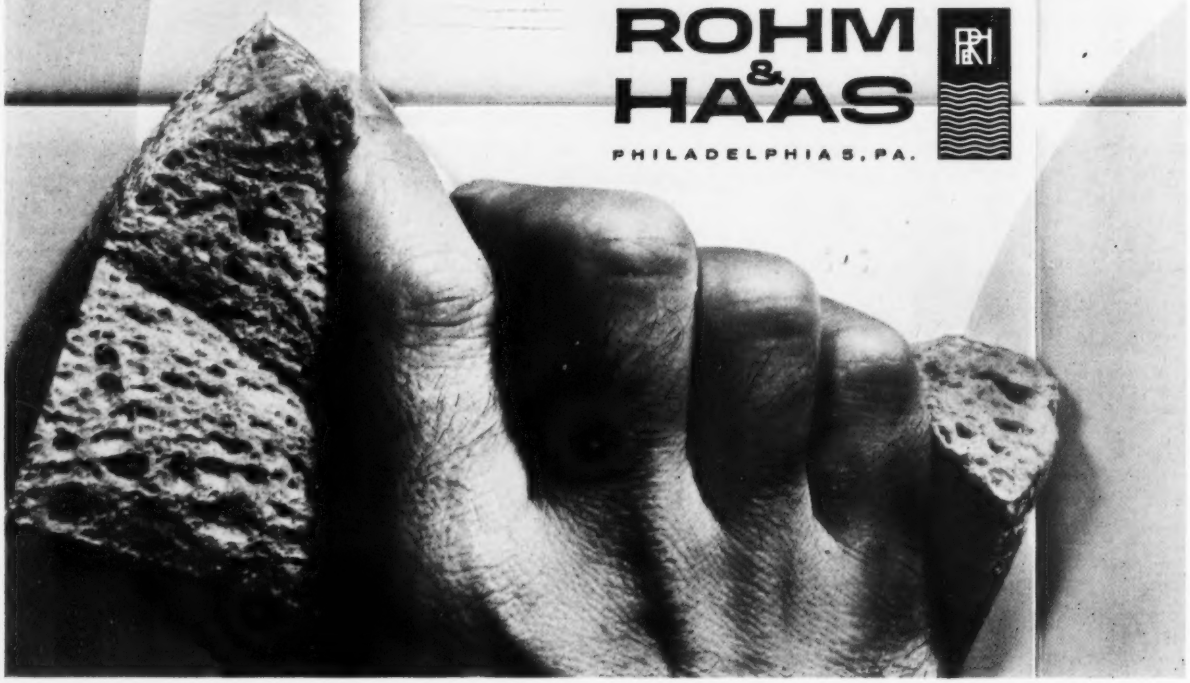
Kills Germs
Kills Odors
Cuts Costs

HYAMINE® 3500 is a powerful combination germicide-sanitizer-deodorant specially formulated to make sanitary maintenance easy and economical with both liquid and powdered products. HYAMINE 3500's unique formula provides high germicidal activity, even in hard water, and is a true deodorant . . . it does not merely mask odors as most products do.

For added cleaning power HYAMINE may be combined with TRITON® X-100 and alkaline builders. The dependability and effectiveness of HYAMINE-based formulations have helped them gain sales success in hospitals, hotels, schools, plants and office buildings. Study a test sample of HYAMINE and take advantage of our formulating experience. It can be a step toward a more successful product.

ROHM & HAAS

PHILADELPHIA 5, PA.



HYAMINE

Table VI. Correlation of Results from Four Tests

Product Pairs A	B	Arm Immersion	Human Patch	Repeat Animal Patch	Water Transmission
4	5	A		=	
6	7	a		b	
8	9	A		a	
3	10	a		a	
3	11	A		A	
6	11	=		a	
12	2	A		=	
3	13	a		A	A
3	2	A	A	a	A
6	14	A	a	b	
3	14	A		=	A
8	14	=		=	
15	8	a	A	=	=
3	4	a	=	a	
6	13	A	A	A	A
6	2	A	A	=	=
16	17	=		=, A	
18	1	A		=, A	A
1	19	=		=	
20	21	=		=	
1	22	a		A	
23	17	A		=	
18	24	a		a	
18	25	a		A	
26	27	A	A		
28	29	A		a	
30	31	=	A	A	
30	32	=		=	

Symbols listed under test columns signify:
A indicates A is significantly milder than B.
[a] indicates A may be milder than B.
= indicates no difference found between A and B.
[b] indicates B may be milder than A.

There are two instances in which the arm immersion test failed to show differences between two products, but the RAP test clearly showed that there were slight differences between the products. These two instances merit some further discussion since they seem to indicate a contradiction to our general conclusion – that the arm immersion test is the more sensitive in detecting product differences. In the comparison of products 30 and 31 no difference was found between the two products in arm immersion since only seven subjects were used in this particular panel. This conclusion may simply be the result of having too small a panel to obtain a statistically significant difference or it may be that the products are indeed roughly equivalent in their effects, in the concentrations used in the arm immersion test.

In the RAP test it was necessary to go up to very high concentrations in order to indicate the difference between these products. It is interesting to note that for this particular product pair the human patch test indicated no difference between the two products at low concentrations. At a high concentration (full strength) the difference between the two products was not obvious when the patches were first removed, but only became apparent twenty-four hours after removal of the patches. Thus conclusions based on a twenty-four hour delayed reaction were quite different from those based on an immediate effect. Such delayed reactions are not common with detergent products.

In comparison of products 16 and 17, these products were found to be equivalent in mildness in the arm immersion test, but A was found to be milder than B in the RAP test at higher concentrations. This particular result is somewhat more difficult to understand in the terms of the pattern established in all other comparisons. The arm immersion panel consisted of twelve subjects, ten of whom reached an endpoint simultaneously on both arms and two of whom continued throughout the entire fifteen immersions without reaching an endpoint on either arm. It would thus appear that if there are any differences between the two products, the differences are very slight. However, the RAP scores obtained at concentrations over 8% were definitely quite different. This anomaly may be due to differences between mouse skin and human skin or to concentration effect which did not show up in the arm immersion test.

Conclusion

In conclusion we can see from Table VI that the correlation among the four tests is very good considering the variability inherent in all biological testing and the differences in testing conditions employed. The most sensitive test appears to be the arm immersion test for revealing slight differences in mildness between two products. The repeat animal patch test serves the useful function of preliminary screening of topical agents. Materials showing significant irritation in the RAP test at standard testing levels are not given further consideration for use in product. Should the mildness ratings be favorable, studies are continued employing the other tests. The effect of products on the water transmission of excised skin correlates well with the other mildness tests.

For simplicity in tabulating the degree of correlation or lack of it among testing procedures, the following method is used. For each paired comparison of two products, A and B, we indicate which of the two products was found to be milder in each of the four tests. A capital "A" indicates a significant difference between the two products with A being the milder. A lower case "a" means that there was an indication that product A was milder than product B in the test but that the difference may not be significant. An equal sign

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CHEMICAL MATERIALS CATALOG
Pages 159-161

HARCHEM
CENTURY BRAND

HARCHEM DIVISION
WALLACE & TIERNAN, INC.
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PLANT IN DOVER, OHIO
IN CANADA: HARCHEM LIMITED, TORONTO

indicates that no difference was found between the two products under the test conditions. Thus a perfect correlation among the four tests would be indicated by Table VI for each pair of products compared there were four capital A's listed under the four tests—or four equal signs. We did not, of course, obtain a perfect correlation among the testing procedures, but the correlation was generally quite good.

There were no cases in which product A was found to be significantly milder by one test and product B significantly milder by another test. In the comparison of products 6 and 7 there was a slight indication that A was milder than B in the arm immersion test and that B was milder than A in the RAP test. In the comparison of products 6 and 14 product A was found to be significantly milder in the arm immersion test, while there was a slight indication that product B was milder in the RAP test. These are the only two instances in the twenty-eight comparisons in which reversals of product mildness estimates were obtained by different testing procedures and in neither of the cases was the reversal significant.

There are, however, several instances in Table VI in which one product was found to be significantly milder by one testing procedure but the two products were not found to be different in another testing procedure. These instances deserve some attention because they shed light on the sensitivity of the various testing procedures.

A failure to establish a difference between two products is not equivalent to proving them identical. It is possible that the degree of exposure of the test subject to the test product was such that real differences which existed could not be demonstrated. In five cases (comparisons of products 4-5, 12-2, 3-14, 6-2, 23-17), a definite difference between two products was established by means of the arm immersion test, but the RAP data did not demonstrate this

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difference. In every instance of this type, however, the RAP values were in the range of 0 to 1 where this test loses sensitivity as was indicated in Figures 5 and 6. It is possible that differences could be shown between these product pairs by conducting the RAP test at higher concentrations. In some cases this is difficult to do because some products tend to form stiff gels and are hard to work with at high concentrations. Perhaps increasing the intensity of the treatment by a longer period of application per day or extending the test over more than four days would demonstrate differences between such products.

Acknowledgment

The data summarized in this report were obtained over a period of several years by many people. The contributions of the following are specially acknowledged: F. P. Bisceglie, V. F. Borselli, B. R. Choman, (Mrs.) G. M. Paparella, L. R. Poggi, D. P. Restuccia, W. C. Schneider and J. L. Solan.

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Hospital Germicides

(*From Page* 80)

clude some type of routine checking on hospital deliveries.

References to the Department registration files and estimates based on the hospital sample collections provide information on the number of different germicides being sold for hospital applications and the number of manufactures soliciting hospital business. These figures are presented in Table 2.

(*To be Continued*)

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Forces in Detergency

(*From Page* 62)

ample it was supposed that the summation of this rapidly decreasing force was equivalent to the action of a constant force through 10^{-8} cm (Å). The force of cohesion then would be

$$\frac{145.6}{10^{-8}} \text{ or } 1.456 \times 10^{10} \text{ dynes} = 1.48 \times 10^{7} \text{ g/cm}^2 \quad (15)$$

or, about 14,000 atmospheres.

The energy of adhesion (42) is the change of internal energy in the separation of a liquid from a solid at an interface of unit area between the two with clean surfaces of each. The *work of ad-*

Table 2. Number of Hospital Disinfectants and Companies Manufacturing Germicides for Hospital Use

	Totals		
Number of	April 15, 1958 Registration Records	April 15, 1961 Registration Records	Estimates from Enforcement Records 4-15-58 to 4-15-61
Products	435	709	590
Companies	203	404	345

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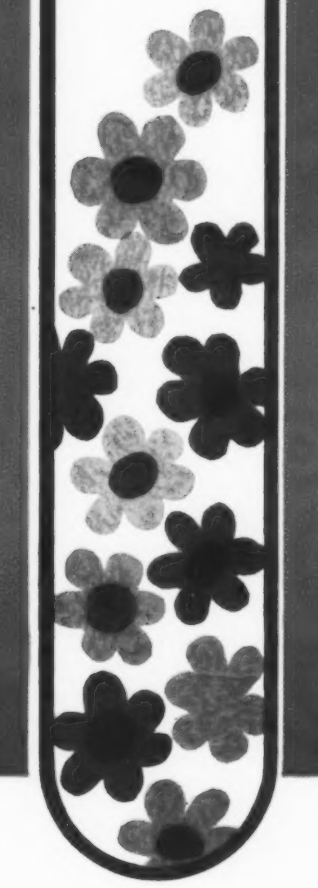

These days when costs leap far ahead of compensating price adjustments, it is essential you keep all your costs to a minimum. When it comes to fragrances for your scented products, the surest way to lower costs is to use quality scents from Orbis. Orbis scents save you money because they **cost you less** . . . they make you money because of their high sales popularity. Investigate how Orbis can help you. Write us (on your letterhead) for samples and for the complete Orbis catalogue of fine essences.

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hesion, W_A, is the increase in free energy of this same system.

(*To be Continued*)

Dow Names Schornstein

Appointment of Dave W. Schornstein as manager of organic chemicals sales was announced recently by Dow Chemical Co.

Slippery Floors

(*From Page* 91)

although the floor is rendered slippery thereby (Citing cases including *Bonawit*). This is contrary to the settled law as announced by our own court.

"In *Rothschild v. Fort and Market Street Railway Company*, 34 P.2d 734, it was held that the evidence that a floor of a hallway maintained by the owner of a building for use by invitees of tenants of the building had been rendered slippery by the application of wax was sufficient to support a finding of negligence . . .

"If wax or, as in the present case, both wax and soft soap are applied to the floor, it must be in such a manner as to afford reasonably safe conditions for the proprietors invitees, and if such compounds cannot be used on a particular type of floor material without violation of the duty to exercise ordinary care for the safety of invitees, by reason of the dangerous conditions they create, they should not be used at all. Of course, slipperiness is an elastic term. From the fact that a floor is slippery does not necessarily result that it is dangerous to walk upon. It is the degree of slipperiness that determines whether the condition is reasonably safe . . ."

I am confident that our expert witness will consider the statements in this decision as a challenge. This decision assumes that waxing automatically makes a floor more slippery. It points out that slipperiness is a question of fact. Unfortunately in too many of the cases in the past the question of slipperiness, condition of application, and many other technical questions such as this have been decided by the jury or the court without the benefit of technical evidence. It has been a question of guesswork.

From the preceding discussion one point must stand out. The past decisions of the courts have turned upon complex technical issues. A jury or a court can properly decide such technical issues only to the extent that they have adequate expert testimony.■

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Detroit 7, Mich., 1900 E. Jefferson Ave.	Lorain 7-2414
Los Angeles 22, Calif., 5052 E. Slauson Ave.	Ludlow 3-4361
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Butonate

(*From Page* 77)

results, butonate has been used experimentally by qualified pest control operators and has been reported most favorably.

Registration has been granted for butonate in aerosols at 1.5% for use against flies and certain other flying insects. Currently, further aerosol test work is being done on roaches and flies at higher dosage levels.

Registration has also been granted for butonate at 0.4% and 0.8% by weight levels in combination with synergized pyrethrins for a household contact spray. At 0.8% – 2% by weight butonate may be used alone for use as a residual spray against flies, mosquitoes, roaches and certain other household insects.

Little work has been done on agricultural insects to date, however, promising results have been obtained on face flies, ticks, adult pea aphids and others.

To summarize, butonate is distinctive and unique in that it combines the following features:

1. It is very low in mammalian toxicity.
2. It is soluble in most organic solvents.
3. It is compatible with pyrethrum, pyrethrum synergists, and other fast-acting knockdown agents.
4. It is effective against houseflies and roaches in oil solutions, emulsions and powders.
5. It is nonstaining and has little objectionable odor.

Butonate, therefore, incorporates most of the desirable qualities of organophosphate insecticides and eliminates many of the less desirable qualities.■

Ingestion Hazards

(*From Page* 60)

the understanding and cooperation of industry appears to be the best means for reducing illness and death when hazardous substances are ingested, as they will be regardless of efforts to prevent it.■

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Hard-working waterless hand cleaners require packaging that can withstand prolonged abuse — sturdy, dependable containers that offer maximum product protection and user convenience. A number of leading chemical specialty manufacturers have found that effective *metal containers,* precision made and lithographed by J. L. Clark, are the perfect answer . . .

Clark containers are built for heavy-duty performance. Side seams and bottoms can be compound sealed. This, together with a precisely fitted screw-type cover*, provides a superior container that gives excellent product protection — also one that is safe and easy to use. A durable exterior finish resists grease and moisture, quickly wipes clean to maintain "like new" appearance. No need for paper labels that become soiled, torn, and illegible.

Clark containers for waterless hand cleaners build product recognition, reflect the superiority of *your* brand! They can be attractively lithographed to brighten up any shelf or work area.

Clark welcomes the opportunity to work with your package designer, or, if you wish, can provide a complete creative service, including structural and graphic package design.

Clark maintains complete laboratory facilities for chemical analysis and can specify an internal container coating tailored specifically to the needs of *your* product. 100% protection is assured.

For detailed information on Clark's complete line of lithographed metal containers, and combination metal/plastic containers, write, wire, or phone today . . .

J. L. CLARK
ROCKFORD, ILLINOIS

*Clark containers for waterless hand cleaners are also available with slip covers.

Packaging...

AEROSOLS · LIQUIDS · PASTES · POWDERS

New "Viv" self-polishing floor wax of Simoniz Co., Chicago, is available in 14, 26 and 46 ounce cans to retail for 59 cents, 98 cents and $1.69, respectively. Shown are the 26 and 14 ounce sizes. "Viv" is claimed to provide a clear finish that has a high degree of resistance to discoloration. It is designed for all types of floors, including hardwood, terrazzo, polished stone, ceramic tile, linoleum and asphalt, as well as rubber and vinyl tiles.

Automotive Chemicals
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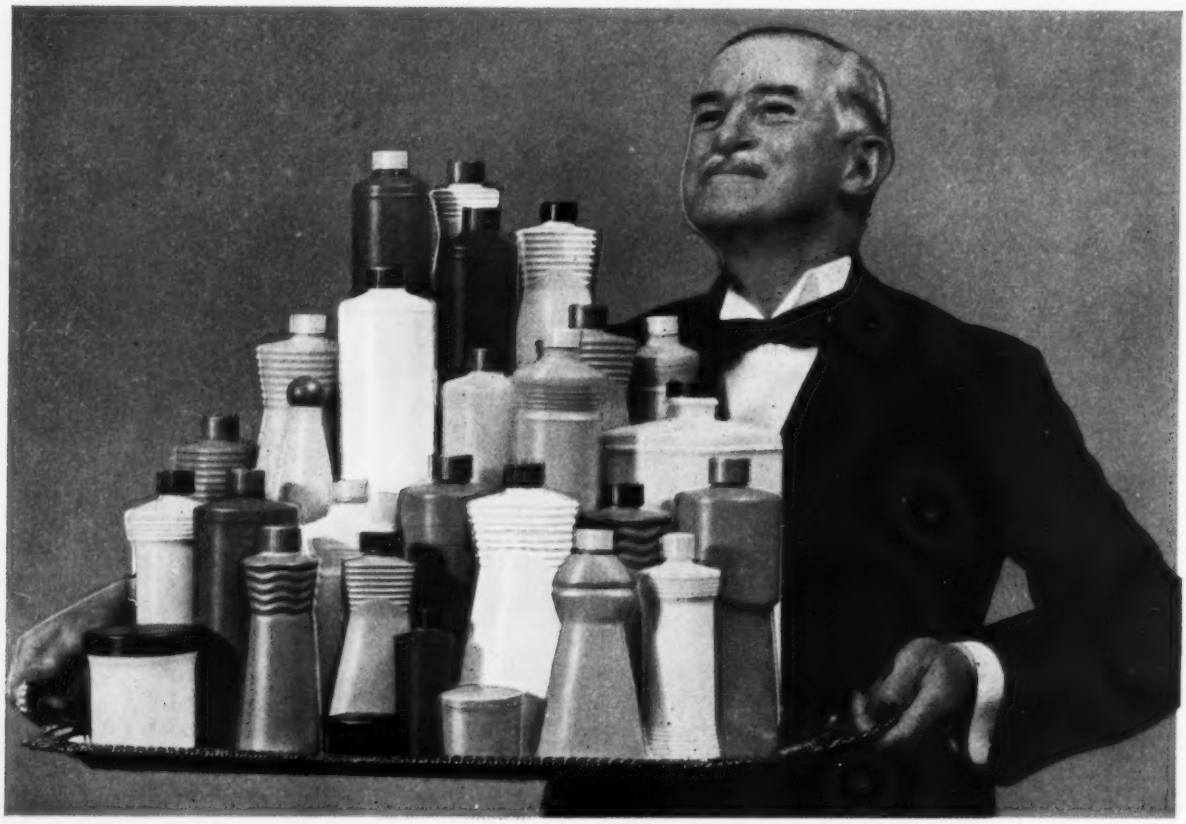
A market for over 28 billion packages annually

Easy-to-grip containers for detergents . . . handy fitments for deodorant applicators . . . no-drip spouts for sauce bottles



Owens-Illinois skill in plastics takes many shapes to serve you

The items featured here are all made of plastics, all by Owens-Illinois. Yet they are made by *different* methods, of *different* plastics, at several *different* factories. (We have ten.)

The "Owens-Illinois way" of making plastic products is not always the common way. Our "skill in plastics" takes whatever shapes are necessary to serve our customers best. This often leads us to design and construct our own machines.

Owens-Illinois has manufactured plastic closures and fitments for more than twenty-five years. We pioneered the manufacture of rigid blown plastic bottles. When you buy plastic products from Owens-Illinois, you buy experience.

PLASTIC BOTTLES
AN (O) PRODUCT

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PACIFIC COAST HEADQUARTERS • SAN FRANCISCO

Plastics for Packaging

By Alvin J. Sanders*,
Colgate-Palmolive Co.,
New York

AS a major mass volume merchandiser of a wide variety of consumer and industrial products, Colgate-Palmolive Co., has had long and varied experience with, and an intense interest in, the use of plastics to package its products. We believe that plastics are not only here to stay but that they will continue to become more and more a part of our lives.

You would be correct in assuming that we have made use of rigid and flexible plastics; that films, laminations, closures, bottles, jars, tubes and bags made from plastics have been studied and have become containers, in part or whole, for our products. And you would be very definitely in the ball park in assuming that we are maintaining a close watch on all the new plastics, whether they still be in the laboratory, in the applied development stage, mentioned in trade journals or in our hands for specific applications.

What Do We Seek?

What are we looking for when we consider plastic materials? We seek all of the properties any packaging material must possess in order properly to present our products to the buying public, *plus* those properties which will help the package sell itself in this age of increasing self-service stores. Briefly, combining these objectives, we desire materials which will satisfactorily house a particular product for its shelf and use life; materials which can be decorated in eye-catching high quality designs at high speeds and low cost, so that they will not only stimulate impulse buying but will retain their identity, thereby aiding the contained product to insure a repeat purchaser. These materials must bring the package to the consumer in the same good physical shape as when it left our plants. Further, they should perform well on readily available packaging equipment. They should be easily obtainable from more than one source of supply. They should overcome those disadvantages existing in the older packaging materials and add a plus feature; their quality should be consistently high, and, of course, their costs should be low. One more requirement — we seek the constant cooperation, technical knowledge and guidance of packaging suppliers in locating and making the best use of these materials and those which are yet to come.

That is what we are looking for. Let us see how well we have succeeded in reaching this formidable goal.

Plastics Experience

During and shortly after World War II, when lead and tin were not available, attempts were intensified to make use of substi-

Colgate uses a wide range of plastic containers for its products.

*Paper presented under the title, "Plastic Bottles, Tubes and Other Merchandising Packages," during ninth annual National Plastics Conference of the Society of the Plastics Industry, Inc., New York, June 7, 1961.

Aerosol Awards...

The tenth annual AEROSOL PACKAGE CONTEST will be held in conjunction with the 48th Annual Meeting of the

CHEMICAL SPECIALTIES MANUFACTURERS ASSOCIATION

ROOSEVELT HOTEL, NEW YORK
DECEMBER 4-6, 1961

. . . will include judging and selecting of best aerosol packages of the year

The aerosol package competition and awards will be divided into fifteen classes as follows:

1. Automotive products.
2. Insecticides, repellents, moth proofers.
3. Room deodorants.
4. Paints, enamels, other protective coatings; paint remover.
5. Other household products — polishes, glass cleaner, rug shampoo, starch, water repellent, snow, etc.
6. Shave products.
7. Hair preparations.
8. Perfumes, colognes, toilet waters.
9. Other personal products — shampoo, body deodorants, dentifrices, sun tan oil, etc.
10. Food products.
11. Horticultural products.
12. Medicinal and pharmaceutical products.
13. Veterinary and pet products.
14. Industrial products — lubricants, belt dressings, stencil inks, etc.
15. Foreign products.

. . . a top award for "best in the show" will also be made

Rules of the contest:

1. Awards will be made on the basis of general sales appeal of the complete package. The awards are given for package design only and do not constitute endorsement of the product, container, valve, label, or other part of the package, nor do they constitute a determination that the package or labeling meets applicable state or federal laws or regulations.

2. All entries must be made in the name of the brand owner or marketer. Products must have been freely offered for sale prior to September 1, 1961.

3. Entries will close October 15, 1961. All entries should be sent as soon after September 1 as possible to the Committee at the CSMA office, and should comprise one completely assembled empty container with attached tag showing (a) name and address of brand owner; (b) class in which entry is made by number noted above. Send one completed entry blank for each package entered. (Entry blanks will be sent promptly to anyone on request.)

4. Entries may be made in as many classes as desired by the same marketer or brand owner.

5. Entries are open to any brand owner anywhere and are not restricted to members of CSMA. There are no entry fees or other charges to entrants. The committee reserves the right to reclassify any entry prior to judging and to reject any entry it deems advisable.

6. Best packages will be selected in fifteen classes noted above and a "best package in the show" will be chosen. Judging will be by a group of qualified persons. Their decisions will be final.

For information and entry blanks, write to
AEROSOL PACKAGE AWARDS COMMITTEE
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MAKE PLANS FOR YOUR ENTRIES NOW!

tute materials for collapsible dentifrice tubes. Paper, aluminum foil and cellulose acetate were among the experimental materials we evaluated, either alone or in combinations. Lack of ability to retain the essential oils and to prevent drying out of the product, rather quickly put these materials to rest. We really never got to first base since we could not even properly contain the product. With the passing years, many of the newer films, the polyolefins and "Saran" to mention some, either coated or uncoated, have been studied. There is no question in our minds that progress has been made but the goal has not been reached.

We were far more successful in our efforts to develop a new all-plastic closure for this tube. The merchandising lift we were able to gain with this was due to the fact that this polyethylene closure did *not* require a liner. Complaints concerning liners that were missing or had become adhered to the tube nozzle lip disappeared.

One of our spray detergent products, which requires protective packaging, was suddenly thrust into the limelight by virtue of a new merchandising program. There were several available packaging materials which had previously been used for the required protection. But, because of the new carton design, both physically and esthetically, it was found that the old standbys would not suffice.

A joint program with one of our suppliers eventually resulted in a polyethylene laminated carton which successfully met all of our requirements.

Today we are marketing "Liquid Vel," a liquid detergent, in a custom shaped, blow molded, all plastic squeezable container having a rigid, all plastic closure and two printed paper labels. Only a short time ago we were packaging the same product in a plastic liner surrounded by a lithographed metal container having a *plastic* nozzle sealed with a rigid, all plastic closure. Simultaneously, we merchandised the same product in a

Currently "Vel" liquid detergent is packaged in custom shaped, blow molded, plastic squeeze bottles in four sizes, with rigid plastic caps.

printed, cylindrical, *plastic bodied* container which had coated metal ends. The closure here was a flexible plastic cap. Not too long before that, the same product was housed in a plastic liner surrounded by a lithographed metal container having a *metal* nozzle. The same all plastic, rigid closure was still in evidence. (If you haven't surmised it by now, the plastic liner surrounded by a metal can was the conventional, well known internally coated metal can).

We forged ahead on the counts of 1) elimination of denting of the container, 2) freedom from the fear of corrosion and leaving rust marks on kitchen counters, and 3) elimination of hazards of personal injury. *Plus* features gained, include a distinctive shape, the much more pleasant feel of the plastic container, and its squeezability. More about these in a little while.

However, we are still searching for the low cost, high speed printed, top quality decoration we had with both the metal can and the plastic bodied metal end con-

(*Turn to Page* 184)

Evolution of a liquid detergent package: Three stages in the packaging of "Liquid Vel" included, left, printed, cylindrical plastic bodied container with coated metal ends and flexible plastic cap closure; center, plastic lined metal container with plastic screw closure, and finally, present custom shaped, blow molded, all-plastic squeezable container.

SHOPPERS PICK PLASTIC

PLAX plastic packages propel all sorts of products into the shopping cart. Plastic catches the eye and ignites the buying impulse. Its beauty is striking—its sales appeal high. Even tiny tots know plastic is lighter to lift and safer to use. PLAX — creator of the plastic squeeze bottle — now offers the largest capacity for *quality* containers in the industry. If your product pours, sprays, or is delivered in drops, PLAX can help you.

PLAX

PLAX CORPORATION, HARTFORD, CONN. • In Canada: Plax Canada, Ltd., Toronto **PLAX GIVES A PACKAGE A PLUS**

packaging notes

CCC Names Farrell

John E. Farrell has been appointed Cincinnati district sales manager for the Plastic Bottle and

John E. Farrell

Tube Division of Continental Can Co., New York, it was announced recently. Mr. Farrell was previously a salesman in that district sales office, which is located at Blue Ash Road and Emerald Ave., Rossmoyne, O.

—★—

Mulford New O-I Director

Ray H. Mulford was recently elected a member of the board of Owens-Illinois Glass Co., Toledo, O. Mr. Mulford is executive vice-president in charge of the company's glass container, Pacific coast and closure and plastics divisions. He succeeds Herman K. Kimble, who has resigned.

—★—

Plax Expands

Plax Corp., Hartford, Conn. producer of blow-molded plastic containers, is currently erecting a one-story manufacturing building, of 146,000 square feet, located on approximately 15 acres of land in Yardville, Mercer County, N. J.

Current plans call for the building to be ready for occupancy in the fall of this year. The company expects an initial employment of 200 people at this site. Additional manufacturing facilities are located at Stonington and Deep River, Conn.; Ligonier, Ind.; Cincinnati, O.; and Anaheim, Calif.

—★—

National Can Record Sales

National Can Corp., Chicago, recently reported 1960 sales reached an all-time high of $109,463,525, compared with $101,817,786 for 1959. Net earnings for the year amounted to $1,123,782, equal to 76 cents a share, compared with 1959 earnings of $328,782, or 24 cents a share.

—★—

Continental Can to Move

Continental Can Co. will consolidate its head office staff and all of its other New York City offices in a new building at 633 Third Ave. in late August and early September, it was announced recently. The organization's telephone number will be 551-7000.

New main office of Continental Can Co., New York. The 41 story building, located at 633 Third Ave., between 40th and 41st streets, consolidates all of firm's New York offices.

Dow Names Craig

Thomas B. Craig has been named marketing manager for household product containers un-

Thomas B. Craig

der the new rigid plastic container program of Dow Chemical Co., Midland, Mich.

Dow manufactures both formed and blown containers for the soap, detergent, chemical specialties and food fields. In addition to manufacturing, the rigid plastic container department's services include design, package evaluation and technical service.

—★—

New Polyethylene Plant

Formation of a new, jointly owned company to make high density polyethylene, was announced recently by National Distillers and Chemical Corp., New York, and Owens-Illinois Glass Co., Toledo.

The new company, National Petro Chemicals Corp., will operate a plant at Houston, Tex., using the Phillips process under license from the Phillips Petroleum Co., Bartlesville, Okla. The plant will have an annual capacity of approximately 60 million pounds of rigid type polyethylene, for blown plastic bottles used for liquid detergents, bleaches and other household products. C. E. Oman will be general manager.

are
you
manufacturing
or
marketing...

"BRAND X"?

CONSUMER COMPLAINTS MAY BE THE REASON

Is your product second best with the consumer? Perhaps the cause is inferior valves which result in defects creating consumer resistance to repeat sales. Eliminate lost product sales caused by faulty valves. Why not play safe, it costs no more to use the aerosol valve which has quality built-in from design to delivery.

Use Precision —it's a sure way to better your position in the market place.

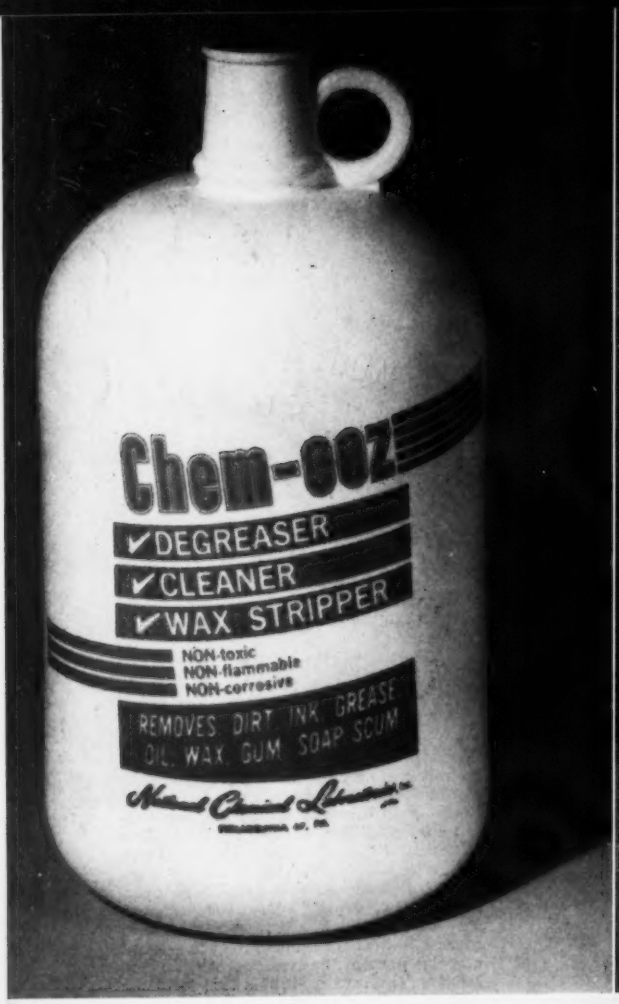
PRECISION VALVE CORPORATION
700 NEPPERHAN AVENUE, YONKERS, NEW YORK

What's New?

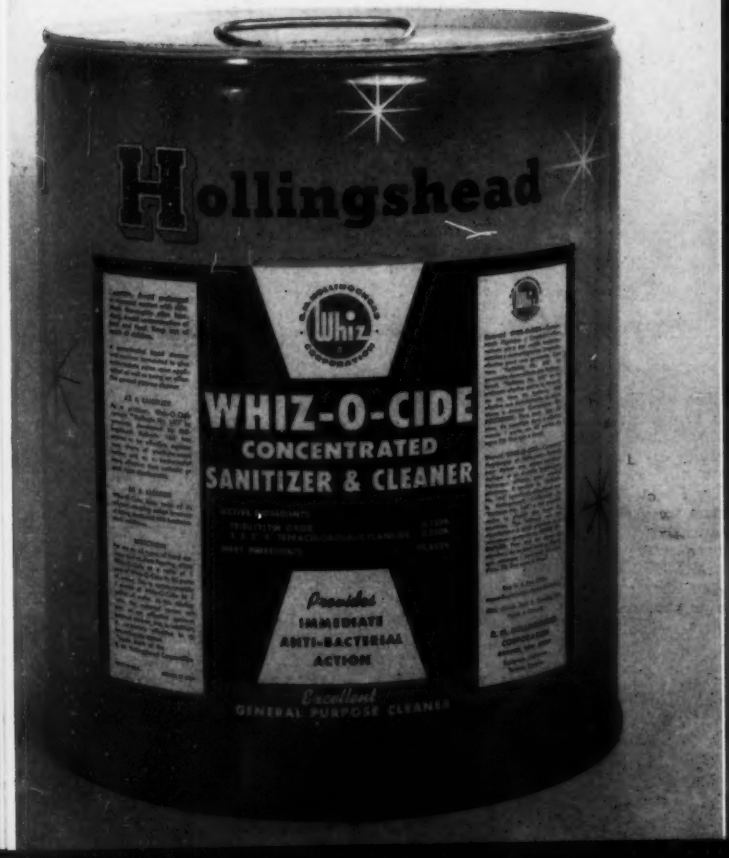
Two new para-based deodorizers have just been added to the line of Click Chemical Corp., Mount Vernon, N. Y. Garbage can deodorizer crystals are packaged in 12 ounce fibre can with metal ends, foil label and sifter top. Label colors are gold, blue and silver. Product is 80 per cent paradichlorobenzene and 20 per cent mineral absorbent. In addition to controlling flies, maggots and ants, product acts as dog repellent. One dozen cans per case. Container by Packard Container Co., Hoboken, N. J. Also new at Click is four-ounce cellophane-wrapped, 100 per cent para block with wire hanger for moth proofing and deodorizing. In assorted colors and fragrances, block can be hung in garbage can or toilet bowl. Tab pulls out of top of package for use as moth proofer. Blank area at top of package can be silk screened with name of distributor. North American Folding Box Co., Brooklyn produced box, one dozen of which are packed to a carton.

A new version of "Lestoil" all-purpose liquid detergent, packed in a plastic bottle, was introduced recently by Lestoil Products, Inc., Holyoke, Mass. New "Sparkle Scent Lestoil" with a light, subtle aroma, is designed to complement original pine "Lestoil." A new, easy-grip glass bottle has been adopted for pine "Lestoil." Both plastic and glass bottles resemble each other closely in size and shape, as do the labels for both products to maintain strong family identity.

Pressure packaged spray formulation of its "Enzactin" for athlete's foot and other superficial fungus infections was introduced recently by Ayerst Laboratories, Inc., division of American Home Products Corp., New York. Extruded, three ounce aluminum "Peerasol" container is by Peerless Tube Co., Bloomfield, N. J. Container exterior features "scratch brush" finish to give burnished effect. Label is paper. Product is filled by G. Barr & Co., Chicago, valve is by Precision Valve Corp., Yonkers, N. Y., and white plastic overcap is by Gilbert Plastics.


Chem-ooz
✔DEGREASER
✔CLEANER
✔WAX STRIPPER
NON-toxic
NON-flammable
NON-corrosive
REMOVES DIRT INK GREASE
OIL WAX GUM SOAP SCUM

Wrisley magicolor
BUBBLE BATH
crazy fun for kids
Wrisley magicolor
BUBBLE BATH
IN HANDY BATH-SIZE ENVELOPES
COMMENDED PARENTS'
colors the water
PINK, BLUE, YELLOW, GREEN
U.S. CERTIFIED COLORS — WON'T STAIN TUB, TOWEL OR YOUNGSTER


Hollingshead
Whiz
WHIZ-O-CIDE
CONCENTRATED
SANITIZER & CLEANER
Provides
IMMEDIATE
ANTI-BACTERIAL
ACTION
Excellent
GENERAL PURPOSE CLEANER

New
INDCO
DRAIN
PIPE
CLEANER

Captions: Facing Page

National Chemical Laboratories, Inc., Philadelphia, recently introduced "Chem-eez" degreaser, cleaner and wax stripper, packaged in a polyethylene gallon jug. The container has an imprinted label, black plastic screw cap, and is equipped with a rigid handle. "Chem-eez" is also available in 55, 30 and 15 gallon drums, five gallon steel pails and one gallon glass bottles.

Allen B. Wrisley Co., Chicago, recently introduced new "Magicolor Bubble Bath" in individual envelopes, for youngsters. Product colors the water pink, blue, yellow or green, but will not stain tub, towel or child the company claims. Said to soften water and eliminate bathtub ring. "Magicolor Bubble Bath" retails for $1 a box.

"Whiz-o-cide," concentrated sanitizer and cleaner, just introduced by the "Whiz" Maintenance Division of R. M. Hollingshead Corp., Camden, N. J., is said to offer three-way patented action. It cleans, sanitizes and protects in one application, without loss of germ inhibiting strength, the company states. For use in hospitals, infirmaries and general office buildings, product is available in five and one gallon sizes.

Independence Chemical Co., Gloucester City, N. J., recently introduced new "Indco Drain Cleaner" packaged in 18 ounce, screw top polyethylene bottle. Blue compound, with aluminum chip activator, is said to open sluggish, clogged drains fast and promote good sanitation in all plumbing fixtures. The bottle carries Independence's red-white-and-blue color scheme and the Independence Hall motif.

Captions: This Page

"Hubsco-147," a new, ready-to-use rodenticide recently introduced by Hub States Chemical and Equipment Co., Indianapolis, Ind., is said to provide economical and effective control of rats and mice. Product is available in polyethylene lined fibre drums and steel pails.

Boyer Chemical Co., Evanston, Ill., has just introduced "Sani-Chlor," a masking agent said to dissolve grease and slime deposits in drain lines, grease traps and catch basins. Pine scented and non-corrosive, "Sani-Chlor" readily mixes with water and can be fed directly into sewage lines or diluted for effective spray application, the company states. Product is available in pints, quarts, gallons and five gallon containers.

Dusting duet offer from O-Cedar, division of American-Marietta Co., Chicago, includes free 1½ ounce can of "Endust" aerosol spray with "Every-Which-Way" cotton and nylon dust mop. The offering, to continue through October, introduces "Endust," packaged in an American Can "Snap-Lock" container, equipped with a snap lock cap from Sterling Seal Co., Erie, Pa.

"Rust Buster," a new penetrant in a four ounce plastic squeeze bottle with extending spout for accurate placement has been introduced by Armite Laboratories, Los Angeles. Said to contain no acid or alkali, product is designed to loosen rusted bolts, screws, shafts, and piping.

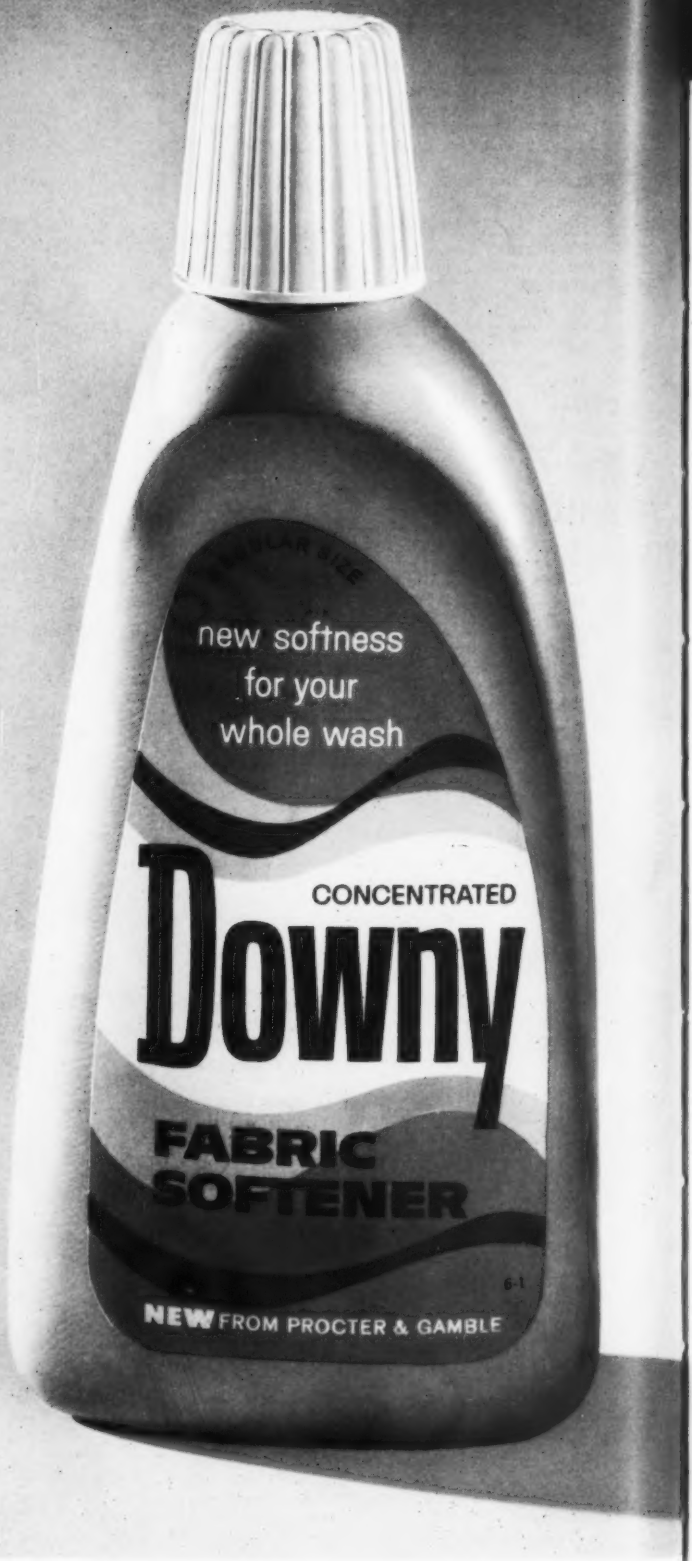
"Onox," for treatment and prevention of athlete's foot, is now available in a six ounce plastic squeeze bottle, Onox, Inc., San Francisco, reports. Formerly available only in bulk, the new refillable containers offer individual protection, eliminating the need for foot-sprayers and footmats. Product is packaged one dozen to a case.

Packaged in MARLEX* for increased SALES APPEAL!

Blow molded of MARLEX high density plastic, these attractive and functional containers command increased point-of-sale attention for Downy Fabric Softener . . . give added sales appeal to a new Procter and Gamble product. In addition they are lightweight, rust-proof, unbreakable, leak-proof . . . shaped to provide a firm grip . . . less costly to ship . . . easy to fill and pack.

Today, MARLEX high density polyethylenes and ethylene copolymers are widely used for blow molded containers of all sizes and shapes. When made of MARLEX, containers are noted for great rigidity, more strength per mil of wall thickness, and high stress cracking resistance. They are also non-absorbent . . . resistant to most chemicals, acids, alkalies, oils, greases, bacteria, rot and fungi . . . and capable of withstanding temperatures from −180°F to 250°F.

*MARLEX is a trademark for Phillips family of olefin polymers.



For more information, see your container supplier . . . or contact us.

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Bartlesville, Oklahoma
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PHILLIPS 66 MARLEX PLASTICS

new trade marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12 (a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany each notice of opposition.

Real E-Z — This for liquid chemical composition for use in starting fires. Filed April 6, 1959 by Cook Chemical Co., Kansas City, Mo. Claims use since Sept. 18, 1958.

10 Below — This for chemical liquid additive used as a windshield washer anti-freeze. Filed Jan. 28, 1960 by Garry Laboratories, Inc., Buffalo, N. Y. Claims use since Dec. 8, 1959.

Air Con — This for packaged refrigerant. Filed Aug. 8, 1960 by Allstadt Manufacturing Co., Dallas, Tex. Claims use since Jan. 10, 1958.

Mousers — This for pesticides. Filed Oct. 7, 1960 by M.F.A. Oil Co., Columbia, Mo. Claims use since Sept. 9, 1960.

Perma-Life — This for permanent anti-freeze. Filed Nov. 16, 1960 by Atlas Supply Co., Newark, N. J. Claims use since Oct. 10, 1960.

Smak—This for liquid insecticide. Filed Nov. 28, 1960 by Chemical & Electronic Research Corp., Baltimore, Md. Claims use since July 2, 1960.

Vestasol—This for liquid soap concentrate. Filed Oct. 24, 1960 by Vestal Laboratories, Inc., St. Louis, Mo. Claims use since Aug. 8, 1950.

EL — This for cleaning compound for removing wax, resin, floor finishes, soap scum and residual film from floors. Filed Dec. 19, 1960 by Economics Laboratory, Inc., St. Paul, Minn. Claims use since Oct. 20, 1960.

Hair-O-Sol — This for hair shampoo. Filed Dec. 21, 1960 by H. Clay Glover Co., Garden City, N. Y. Claims use since Nov. 8, 1960.

Grand—This for dry detergent and cleaning and polishing preparations for household and other uses. Filed Dec. 27, 1960 by Grand Union Co., East Paterson, N. J. Claims use since March 1958.

Renelle — This for toilet soap. Filed Jan. 3, 1961 by Renelle, Inc., Dayton, O. Claims use since March 1, 1952.

Lady Leone—This for dandruff treatment shampoo with hexachlorophene. Filed Jan. 3, 1961 by Albudon Products Co., Altoona, Pa. Claims use since June 23, 1960.

Durex—This for antifreeze for motor vehicles. Filed Jan. 23, 1961 by Morrison Oil Co., Portland, Ore. Claims use since September 1954.

Dazzle — This for all purpose cleaner for household use. Filed Oct. 19, 1960 by J. L. Prescott Co., Passaic, N. J. Claims use since Aug. 17, 1960.

Carb-Medic—This for fuel system and combustion chamber cleaner and conditioner. Filed Nov. 25, 1960 by Radiator Specialty Co., Charlotte, N. C. Claims use since Nov. 16, 1960.

Merit — This for all purpose cleaner for use as a hand cleaner and general cleaner. Filed Dec. 16, 1960 by GP Manufacturing Co., Kenmore, N. Y. Claims use since Aug. 10, 1960.

Slumberland—This for baby oil, baby cream, baby lotion, baby shampoo, and baby soap. Filed Dec. 6, 1960 by Johnson & Johnson Co., New Brunswick, N. J. Claims use since April 18, 1960.

Hydrazene — This for chemical compound for removing rust and other spots from fabrics. Filed Dec. 29, 1960 by National Cleaners Chemical Manufacturing Co., Chicago. Claims use since March 21, 1921.

Sili-Wick—This for eye glass lens cleaner. Filed Dec. 27, 1960 by Superior Laboratories, Inc., Tyler, Tex. Claims use since June 17, 1960.

Power Puff—This for impregnated scouring pads. Filed Feb. 6, 1961 by Colgate-Palmolive Co., New York. Claims use since Aug. 30, 1960.

Silver Dollar — This for liquid and paste cleaner, polish and wax. Filed Feb. 2, 1961 by Western Auto Supply Co., Kansas City, Mo. Claims use since Jan. 11, 1961.

Satintop — This for vegetable wax products used for dressing leather. Filed June 8, 1960 by Chemical Coating Materials Co., Belleville, N. J. Claims use since Nov. 15, 1958.

Frillon — This for weed and brush killers. Filed June 22, 1960 by Dow Chemical Co., Midland, Mich. Claims use since May 19, 1960.

Rusty — This for preparation for dissolving rust. Filed June 24, 1960 by Albicrome Products, South Boston, Mass. Claims use since March 10, 1960.

Proof—This for pressurized insecticide, namely, moth spray. Filed Oct. 18, 1960 by M. F. A. Oil Co., Columbia, Mo. Claims use since Sept. 21, 1960.

Clor-Aid—This for water purifier in powder or tablet form, for use in the purification of water in swimming and wading pools. Filed Aug. 8, 1960 by Coastal Chemical Corp., Garfield, N. J. Claims use since Jan. 4, 1960.

Jeweluster — This for preparation which cleans precious and semi-precious stones, and jewelry, silver, gold, copper and brass metals and also removes the tarnish therefrom. Filed July 5, 1960 by E-Z-Est Products Co., Oakland, Calif. Claims use since Aug. 8, 1951.

White Glove — This for all-purpose cleaner to be used for automobiles and in the home. Filed July 7, 1960 by Mmar Corp., Chicago. Claims use since June 14, 1960.

Coldet — This for detergents for laundry, marine, industrial and general household cleaning. Filed July 21, 1960 by Whirlpool Corp., St. Joseph, Mich. Claims use since May 17, 1960.

Clor-ade — This for detergent for mechanical dishwashers. Filed Oct. 24, 1960 by Hagan Chemicals & Controls, Inc., Pittsburgh, Pa. Claims use since Sept. 13, 1960.

Surfadyne — This for germicide detergent. Filed Nov. 10, 1960 by H & R Products, Inc., Cockeysville, Md. Claims use since July 5, 1960.

Under 21—This for hair shampoo. Filed Nov. 16, 1960 by Mennen Co., Morristown, N. J. Claims use since Sept. 15, 1960.

Hallco — This for compositions for cleaning ferrous and non-ferrous metal products. Filed Jan. 10, 1961 by C. P. Hall Company of Illinois, Chicago. Claims use since Oct. 14, 1957.

Tri-o-thene — This for cleaning compositions for metals, fabrics, wood and other surfaces. Filed Jan. 12, 1961 by De Mert & Dougherty, Inc., Chicago. Claims use since Dec. 9, 1960.

Dow — This for cleaning products, including cleaning solvents, both industrial and dry cleaning, and detergents. Filed Jan. 12, 1961 by Dow Chemical Co., Midland, Mich. Claims use since 1917.

Spray-Glo — This for combination cleaner and wax compositions for use on floor surfaces. Filed Feb. 13, 1961 by Hertron Chemical Co., Charlotte, N.C. Claims use since June 1960.

So Lovely — This for hair shampoo. Filed May 19, 1959 by Realistic Co., Cincinnati. Claims use since March 18, 1959.

Skacetrol — This for scale solvent for use in boilers, water heaters and the like. Filed Aug. 24, 1959 by Skasol, Inc., San Francisco. Claims use since July 8, 1959.

Bonewitz — This for cleaning and sanitizing plants. Filed March 3, 1960 by Bonewitz Chemicals, Inc., Burlington, Iowa. Claims use since 1939.

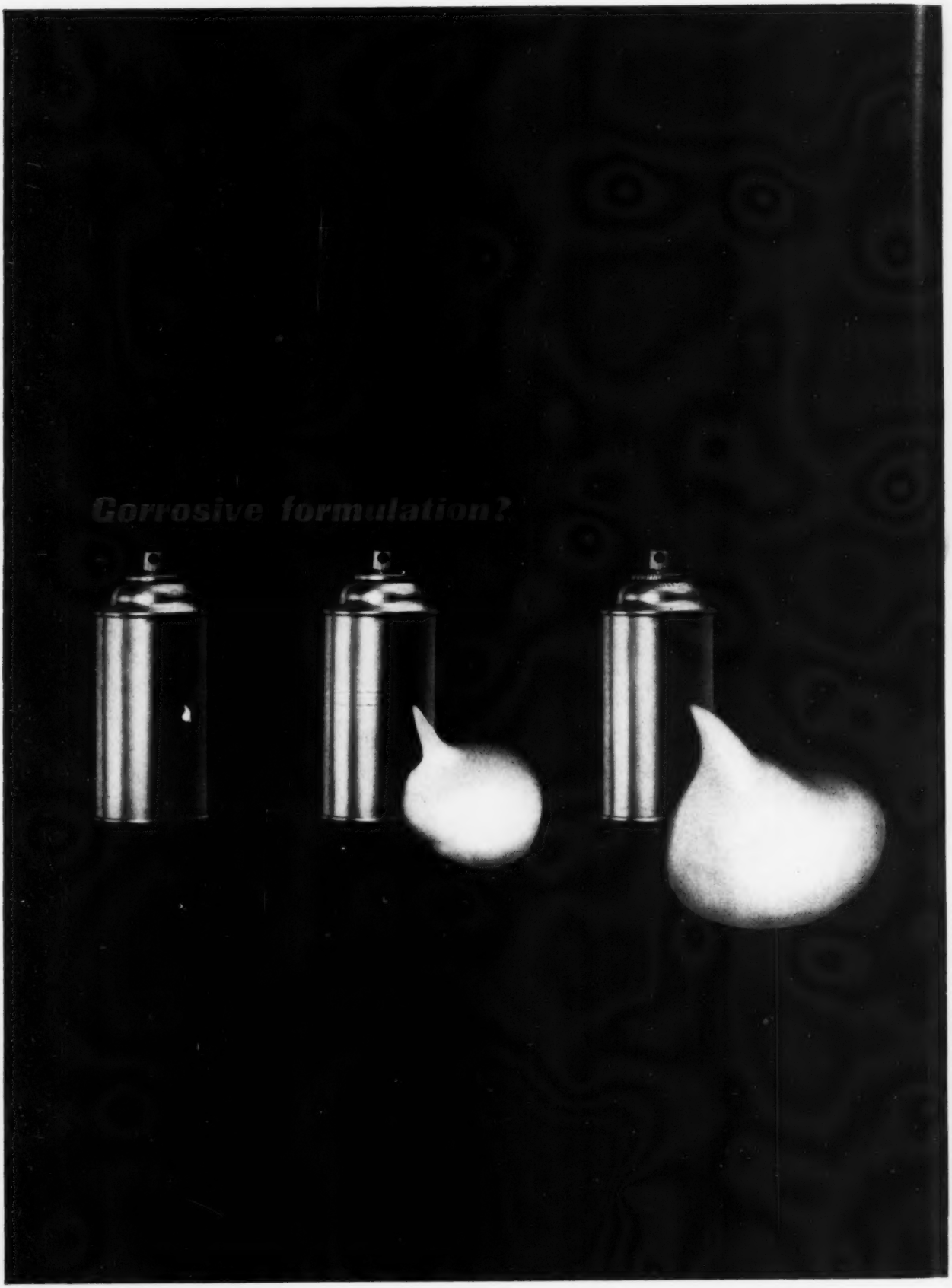
Matey — This for bath detergent, powdered form. Filed Oct. 5, 1959 by J. Nelson Prewitt, Inc., Rochester, N. Y. Claims use since April 29, 1959.

Soft Curl—This for hair shampoo. Filed Dec. 30, 1959 by Helene Curtis Industries, Inc., Chicago. Claims use since Dec. 2, 1959.

Hospital Laundramine — This for liquid laundry disinfectant or sanitizing agent. Filed July 12, 1960 by West Chemical Products, Inc., Long Island City, N. Y. Claims use since April 1, 1960.

E-Day — This for rodenticide. Filed Oct. 6, 1960 by Winston Sales Co., Chicago. Claims use since Aug. 9, 1960.

Greenfield — This for crabgrass killer. Filed Dec. 12, 1960 by Eli Lily and Co., Indianapolis, Ind. Claims use since Nov. 18, 1960.


Corrosive formulation?

Check Du Pont's knowledge before loading
Before you invest time and money in a new aerosol formulation, why not check possible corrosion problems with Du Pont? We don't have all the answers . . . but after 30 years of research Du Pont has learned more about fluorocarbons and corrosion than any other supplier in the field. A quick 'phone call from you can tap that knowledge. ■ Your problem may be: electrolytic corrosion; corrosion through the inter-action of compounds*; corrosion from product decomposition, catalysis through metallic ions in the solution; or corrosion from "concentration cells" where a small part of the metal area becomes highly reactive. All these difficulties have been studied by Du Pont. ■ The information we have is available to you. So before loading a new formulation, if you're concerned about corrosion, call or write the Du Pont Company, "Freon" Products Division, Wilmington 98, Delaware.
*"Freon-11" S greatly reduces corrosion from the reaction of alcohol with propellent.
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How to formulate

Stable Alcohol-Based Aerosols

By Frank A. Bower* and Laurence J. Long,
"Freon" Products Laboratory,
E. I. du Pont de Nemours & Co.,
Wilmington, Del.

ALCOHOL-based aerosol formulations are subject to an unusual type of deterioration. Complete stabilization of such systems requires protection against distortion of odor, development of acidity and, ultimately, corrosion of the container. The cause of this behavior was recently discovered to be a free radical reaction of trichlorofluoromethane with ethanol (1).

$$CCl_3F + CH_3CH_2OH \rightarrow CHCl_2F + CH_3CHO + HCl$$

Acetaldehyde and hydrogen chloride, products of this reaction, are responsible for the deterioration of alcohol-based aerosol products.

It has been established that air can inhibit this reaction and retard the degradation described above. The effect of air is dependent upon its concentration which is very difficult to control in commercial aerosol packaging. Air also has undesirable side effects such as increasing pressure, oxidizing sensitive components of the formulation and cooperating with water in rusting container walls.

The search for efficient inhibitors for the reaction of trichlorofluoromethane (propellant 11) with simple alcohols is reported here. Toxicity studies with propellants containing the preferred inhibitor are summarized.

Experimental Procedure

Initial testing of candidate inhibitors followed the conventional testing procedure for aerosol packages; i.e. extended storage at 100° and 130°F. This method proved unsuitable because of the excessive time required to obtain significant results and the rapid accumulation of large numbers of sample cans. A screening procedure was developed which permitted the rapid selection of potentially useful inhibitors and elimination of unsuitable materials. Each candidate was tested at the level of 0.5 per cent in a mixture of 70 per cent trichlorofluoromethane and 30 per cent Formula 39C ethyl alcohol for 24 hours at 194°F. Several other denatured ethyl alcohols as well as methanol and isopropanol were found to give the same results.

It was necessary to reduce the air concentration to 1 volume per cent (vapor phase) for successful application of this test. The experimental procedure was:

1. A 1.5 weight per cent solution of the candidate inhibitor in Formula 39C denatured alcohol was prepared.
2. Six-ounce, two-piece, half-pound tinplate, aerosol cans were charged with 30 grams of this solution.
3. Eighty-five grams of propellant 11 and a boiling chip were added.
4. The cans were loosely closed with a blank cup and set in a shallow vessel of hot water (130°F.).
5. 15 grams of propellant 11 were allowed to boil off and containers quickly capped.

The air concentration in containers loaded in this manner was 1.0 ± 0.2 volume per cent. At the end of a storage period of 24 hours at 194°F., the samples were evaluated as to color, odor, can condition and apparent pH.

The measurement of apparent pH required strict adherence to detail to obtain consistent results. Samples were transferred to a beaker and warmed to 110°F. using a water bath. The samples were removed immediately from the heat source and allowed to cool 10 minutes. The pH was then read using a standard pH meter.

Since the pH meter is designed to measure acidity in aqueous media, the results of measurements in alcoholic solution cannot be interpreted as true pH. However, it was shown by titration that, even in alcoholic systems, samples having a low pH are invariably more acidic than those having a higher pH. Thus, the test is useful as a qualitative comparison of the acidity of several samples but absolute conclusions usually cannot be drawn.

Uninhibited samples, loaded and stored under the conditions described above, barely survived the test, were badly corroded, highly colored, odoriferous and very acidic. A few containers failed before 24 hours had elapsed. Well-inhibited samples easily survived the test, retaining their original color, odor and can condition, although their apparent pH usually lowered to 4-5 from the original value of 7-8. Any compound which passed the screening test was then extensively evaluated in long-term

*Paper presented at 47th midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1961.

storage at 100°F. The same procedure was utilized in preparing samples for extended storage as was used in the screening test. Specimens were examined at 2-, 4-, 6-, and 12-month intervals to assess the performance of various candidates.

Discussion

A. Screening tests

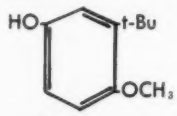
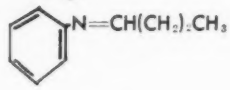
The problem of stabilizing alcohol–propellant 11 systems was approached in a two-fold manner. First, and most desirable, inhibition of the reaction of propellant 11 with ethanol; second, suppression of the secondary reactions of acetaldehyde and hydrogen chloride. Approximately 300 potential inhibitors were screened in the course of the work. Examples of the several types studied are shown in Table I.

Free radical reactions usually can be inhibited by several classes of compounds including antioxidants and polymerization inhibitors. Examples of both types were studied and found to be unsuitable. Polynitro aromatic compounds, normally regarded as free-radical reaction inhibitors were ineffective, but nitroparaffins proved to be unusually efficient. Hydrocarbon inhibitors, such as "Terpene" B gave erratic performance, depending upon oxygen concentration, but low molecular weight olefins were quite effective. Both nitroparaffins and olefins inhibit the alcohol-propellant 11 reaction as evidenced by the absence of dichlorofluoromethane, acetaldehyde and hydrogen chloride after storage.

Many materials which were expected to counteract the effects of secondary reactions were evaluated. Acid acceptors such as bases and epoxides were evaluated and found to be unsuitable. Metal sequestrants such as phosphates, chelating compounds, etc. were also ineffective. Many miscellaneous chemicals and proprietary mixtures were included in this program.

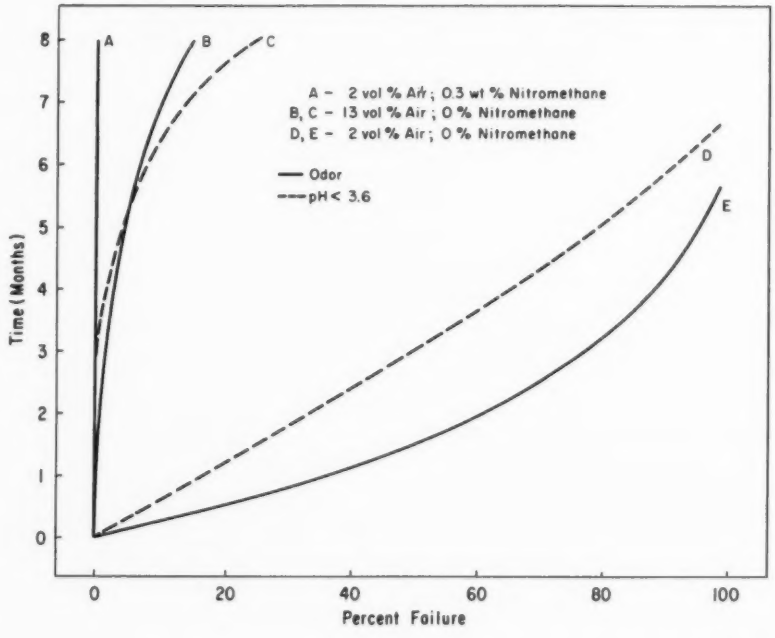
Twenty-five potential inhibitors were selected on the basis of these preliminary screening tests and evaluated over extended periods of time at 100°F. Several examples of nitroparaffins and olefins were found to provide the necessary stability to alcohol-based aerosol formulations.

Table I. Types of Compounds Screened in Propellent 11/Ethanol

Type	Example	Results
Food Antioxidant		Ineffective
Rubber Antioxidant		Ineffective
Polymerization Modifier	CH_3-$(CH_2)_{11}$-SH	Ineffective
Acid Acceptor	CH_2-CH_2-CH-CH_2 (O)	Ineffective
Buffer	N-$(CH_2$-CH_2-OH$)_3$	Ineffective
Sequestering Agent	CH_2-N-$(CH_2$-$CO_2H)_2$ / CH_2-N-$(CH_2$-$CO_2H)_2$	Ineffective
Olefin	CH_3-CH=CH_2	Effective
Nitroparaffin	CH_3-NO_2	Effective

A stabilizer for aerosol products should be colorless, odorless, volatile and nontoxic so as to have no deleterious effect on the product. Of the several effective compounds, nitromethane was selected as the material best meeting all these requirements. Inclusion of the stabilizer in an aerosol package is most easily accomplished by us-

Figure 1. Failure rate of aerosol hair spray (100°F.)



ing a dilute solution of nitromethane in the propellant 11 portion of the formulation.

B. Nitromethane Studies

In order to establish the relationships among stabilizer concentration, air concentration, can type and storage conditions, a test pack of hair spray was prepared. Approximately 6000 two and three-piece, half-pound tinplate cans were prepared having stabilizer concentrations of 0.15 or 0.30 weight per cent and air concentrations (vapor phase) of 2, 7 or 13 volume per cent. A portion of these samples was stored at 100°F., the remainder at 72°F. Containers were inspected periodically to determine the changes which were taking place in the formulation. Color, odor and apparent pH of the contents and the condition of the containers were evaluated and recorded as before.

The most sensitive observation proved to be the odor of the concentrate. A so-called "corrosion odor" appeared very early in the deterioration process. This odor development was correlated with apparent pH when no stabilizer was present, becoming obvious when the pH fell below 3.5. In the presence of stabilizer, no odor change could be detected in any samples. Changes in the apparent pH were smallest with stabilized samples in three-piece containers. More important, the pH of stabilized samples was invariably free from the erratic behavior often seen in unstabilized formulations.

The condition of the cans was evaluated on an arbitary scale of 0-5, as follows:

0—No perceptible attack
1—Barely perceptible attack
2—General detinning liquid phase
3—Extensive attack liquid and vapor phase
4—Extremely heavy corrosion — heavy solids deposit
5—Bulged, pinholed, or burst

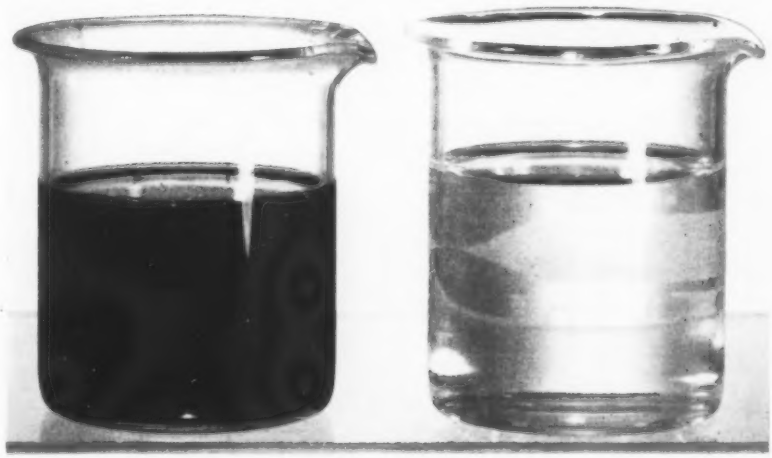
Color changes were recorded but were not considered significant since some other form of failure usually occurred first.

Advantages of nitromethane stabilizer in controlling container corrosion is shown in above photographs. Both cans were filled with alcohol/propellant 11 and subjected to same tests, except that can on right in each case contained "Freon 11" S propellant.

Analysis of the data obtained from storage tests at 100°F. showed that with well-purged (2 volume per cent air) uninhibited hair spray, a 60 per cent failure rate occurred within two months because of objectionable odor development. When air was present at 13 volume per cent in the vapor phase, 5 per

(*Turn to Page* 137)

Alcoholic concentrates removed from test cans show marked difference. Beaker on left contains very dark, discolored and foul-smelling concentrate from container in which unstabilized formulation was used, while concentrate which included "Freon 11" S propellant is clear with no objectionable odor.



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In Sun-Lac Post

The appointment of Silvio A. Del Vecchio as production manager for Sun-Lac, Inc., Clark, N. J., was announced July 25, by D. J. Rubenfeld, president. He will be in charge of the maintenance, engineering and production operations on all Sun-Lac aerosol lines.

Silvio A. Del Vecchio

Prior to joining Sun-Lac, Mr. Del Vecchio was maintenance group leader at Revlon; and previously supervisor of production and maintenance for Fluid Chemical Co., Newark, N. J.

Sun-Lac offers private label and contract aerosol packaging services, including research, warehouse and shipping facilities, and equipment to handle pressure and cold filling of both long and short production runs.

—★—

Pace Adds Representatives

Pace, Inc., Wilmington, Del., recently announced the appointment of three sectional representatives to handle its private label line of aerosol products in the sanitary supply industry. The representatives and territories are: R. W. Hanselman Co., Jacksonville, Fla., covering Florida and Georgia; Sommers Co., Dayton, O., covering Ohio, Indiana, Kentucky and lower Michigan; and Lynn Peavey Co., Overland Park, Kansas, covering Missouri, Iowa and within a 50 mile radius of Kansas City, in the states of Nebraska and Kansas.

—★—

Lodes to European Meeting

Fred Lodes, Lodes Aerosol Consultants, Inc., New York, chairman of the European Aerosol Liaison Committee of the Chemical Specialties Manufacturers Association, New York, will attend the International Congress of the Federation of European Aerosols to be held in Lucerne, Switzerland, Oct. 4-7. Official representative of the CSMA, Mr. Lodes will be staying at the Hotel Schweizerhof.

—★—

Emson Names Barnett

Raymond Barnett, formerly associated with Revlon, Inc., New York, has joined the sales staff of Emson Research, Bridgeport, Conn., it was announced recently. He will specialize in cosmetic and toiletry markets for the sale and technical service of Emson valves and aerosol specialties.

Mr. Barnett's previous associations in the industry include Old Empire Corp., Newark, N. J., and Wilson Glass Co., Brooklyn.

Raymond Barnett

Winer to Africa

Abraham Winer, former owner and president of Puritan Distributing Co., Boston aerosol fillers, has been selected as an advisor on small business practices to the government of the Federation of Rhodesia and Nyasaland, and to business organizations and small proprietors throughout that area. Mr. Winer leaves in late September for his new appointment, which is of four months duration.

Abraham Winer

In February of this year, Mr. Winer and his wife returned from a seven and one-half months around-the-world trip.

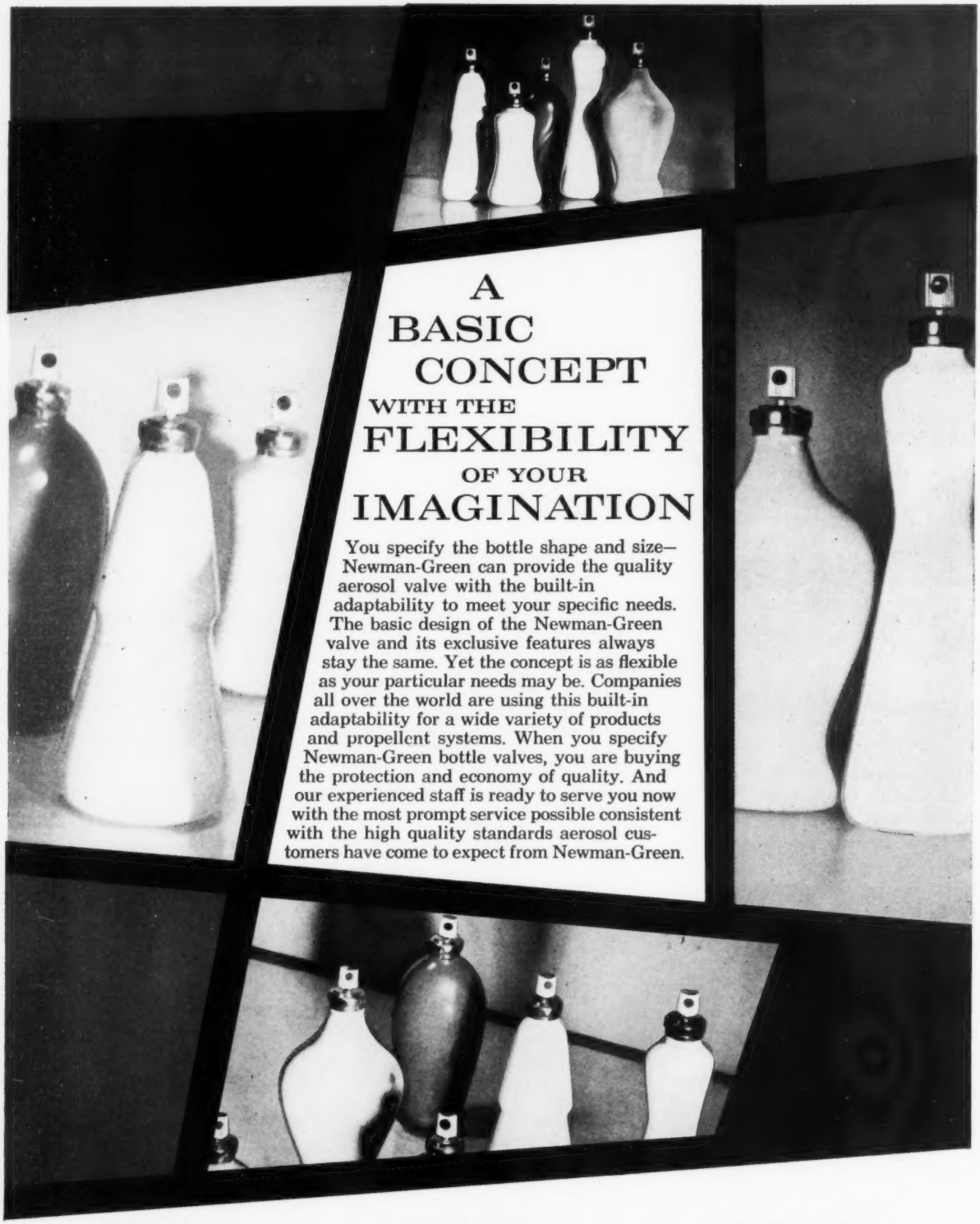
Since his return he has been occupied with the new building of the Retina Foundation, Boston, the largest eye research center in the world, as a member of the Foundation's development board.

—★—

Strouse Financing

Strouse, Inc., Norristown, Pa., aerosol custom loader, has filed a registration with the Securities and Exchange Commission covering 600,000 of six per cent convertible subordinated debentures of 1981. The registration statement also includes 35,000 common shares which underlie five year warrants

(*Turn to Page* 136)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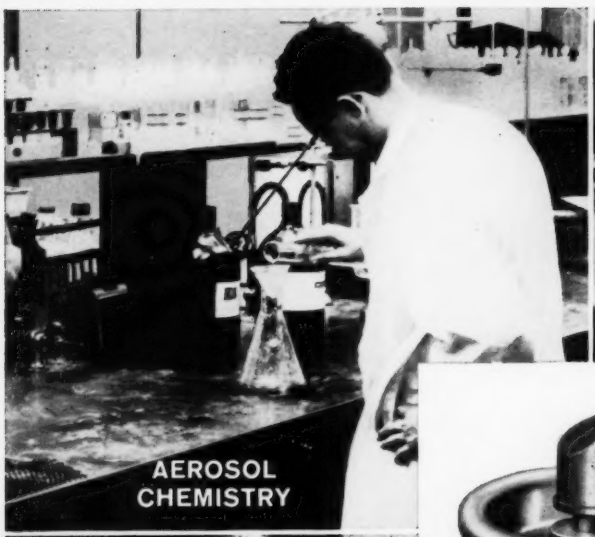

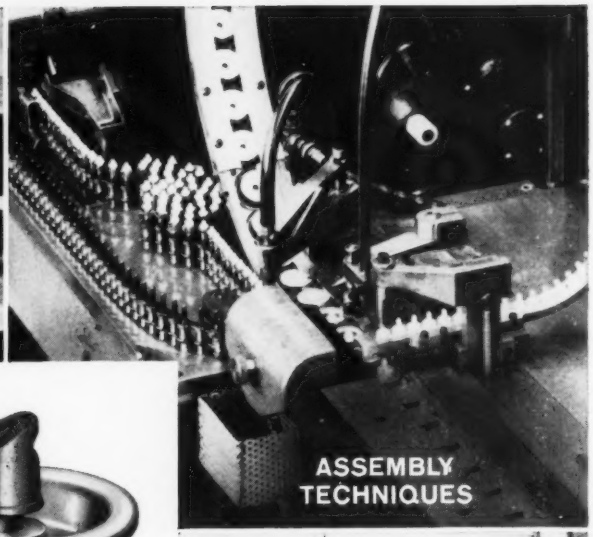

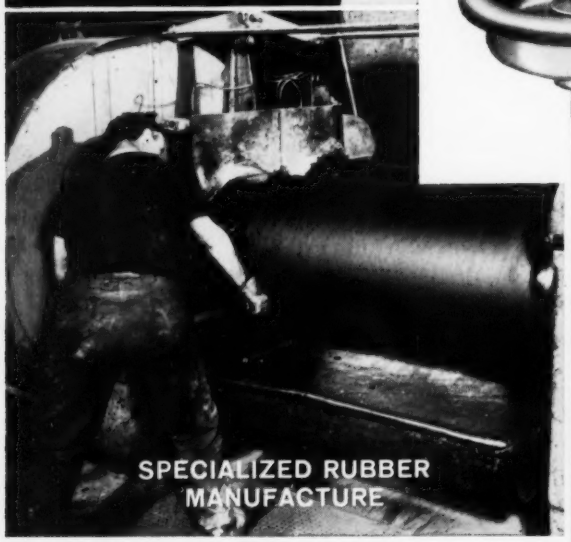

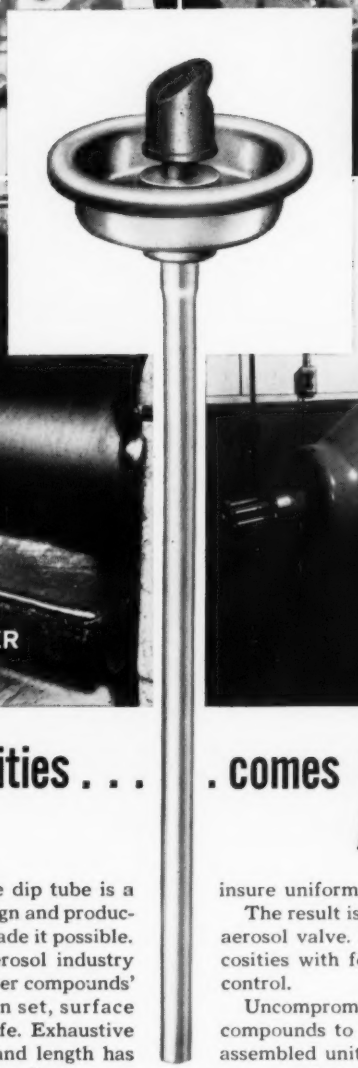

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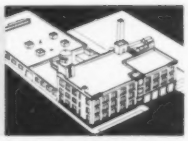

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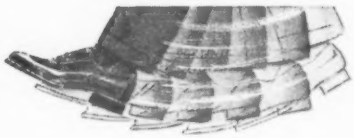

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(*From Page* 131)

to be sold to the principal underwriter for $35.

The company manufactures and packages cosmetics, household, automotive, pharmaceutical and other aerosol products primarily on a private label basis.

Of the estimated $505,000 net proceeds from the debenture sale, $14,000 will be used to purchase about seven acres of land, $316,000 to construct a plant with a private railroad siding; $75,000 to purchase additional equipment and machinery, and the balance will be added to the working capital and used for general corporate purposes.

—★—

Schrader Appoints Three

Appointment of Steele J. Elmi as chief aerosol chemist, and of Frank J. Brusky and Harold P. Hecken as special representatives, aerosol sales, has been announced by A. Schrader's Son, division of Scovill Manufacturing Co., Brooklyn.

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Mr. Brusky handles aerosol valve sales in the eastern states and Mr. Hecken represents the aerosol division in the midwest. Mr. Elmi is responsible for coordination of all pre-production testing of valves and customer formulations and testing of end-product shelf life.

Before joining Schrader, Mr. Elmi was aerosol chemist at Nestle-LeMur Co., New York. Prior to that he was technical director of Powr-Pak Division, B. T. Babbitt, Inc., New York and a technical sales representative on aerosol propellants for the General Chemical Division of Allied Chemical Corp., New York.

For eight years prior to joining Schrader, Mr. Brusky had been in customer sales and service with Precision Valve Corp., Yonkers, N. Y.

Mr. Hecken, with Schrader for the past 11 years, has served in a number of technical and sales positions. For the past six years he has been the company's industrial sales representative in the midwest.

—★—

New Valhalla Division

Fred R. Gardner, who founded Valhalla Aerosol Products, Inc., Pleasantville, N. Y., in September, 1960, recently announced the formation of a new division to distribute sanitation and maintenance supplies. The new division, known as Valhalla Products Co., has headquarters at 28 Hobby St., Pleasantville. The parent company markets industrial and household aerosol products.

Steele J. Elmi

Frank J. Brusky

Harold P. Hecken

Fred R. Gardner

Before forming Valhalla Aerosol Products, Mr. Gardner served in sales executive capacities for two major contract aerosol loaders. From October, 1957 until April, 1959, he was sales manager of Aerosol Techniques, Inc., Bridgeport, Conn. He joined Powr-Pak, Inc., Bridgeport, in April, 1959 and remained with that firm until September, 1960, when he left to form Valhalla Aerosol Products.

The new Pleasantville sanitary supply distributor plans to add a full line of industrial type aerosol products to its line of maintenance and sanitary supplies and equipment. These will include room deodorants, insecticides, mold release compounds, protective coatings for metal, rust inhibitors, coatingsand paint and varnish removers. Sanitary supplies handled by Valhalla include soaps, detergents, brooms, brushes, and floor waxes.

Raymond Rothgable, who has been with Valhalla since its founding, is in charge of sales of industrial aerosols. Retail sales of aerosols are now being handled by Thomas C. Williams, who for the past seven years has been with Philadelphia Engineering Co. Another new Valhalla staff member is Albert Coury, formerly assistant manager of the St. Louis branch store of Saks Fifth Avenue, New York. He is covering Nassau and Suffolk counties on Long Island for Valhalla Products' maintenance and sanitary supply business.

Alcohol Based Aerosols

(*From Page* 129)

cent failed at five months because of objectionable odor (Figure 1). When nitromethane was present no failures were observed after eight months' storage. Complete data are not yet available which will permit an accurate estimate of the improvement in shelf-life to be expected from stabilizing the formulation with nitromethane.

Miscellaneous Evaluations

After the stabilizing effectiveness of nitromethane had been established, it became necessary to study its possible side effects. Under appropriate conditions nitromethane is capable of reacting with reducing agents, carbonyl compounds, bases, etc. (2, 3). Because this stabilizer is expected to find wide application in cosmetic products, the effect of its reactivity in the presence of soaps and human hair was studied. Shampoo, hair waving lotion and hydrogen peroxide were used to treat blond human hair. This hair was then treated with a hair spray containing 0.3 per cent nitromethane. In no cases could any changes be detected.

Many products other than hair spray make use of simple alcohols. Certain of these, such as room deodorants, have been tested to determine whether or not a stabilizer extends their shelf-life. In every case the use of nitromethane as a stabilizer improved the shelf-life of the product without harmful side effects. Thus, at effective concentrations, no deleterious effects were found in any formulation. Preliminary experiments with stabilized formulations in aluminum and stabilized formulations containing water have given interesting results which will be reported when the work has been completed.

Toxicity studies carried out on rats at Du Pont's Haskell Laboratory for Toxicology and Industrial Medicine showed no difference in inhalation toxicity between propellant 11 and propellant 11 plus 0.3 per cent nitromethane. The approximate lethal concentration, ALC (the lowest concentration found to kill) for male albino rats was determined to be 66,000 ppm for both products. Repeated exposures were conducted at 12,000 ppm, approximately one-fifth of the ALC, for five hours daily over a ten-day period. During exposures, rats inhaling propellant 11 in air showed a clinical response similar to those inhaling propellant 11 plus 0.3% nitromethane. Observations on weight gain and the animal's general health showed no differences among animals treated with propellant 11, or propellant 11 with 0.3 per cent nitromethane and unexposed animals. Micropathological examination of the internal organs of test animals failed to disclose any adverse changes in any animals attributable to nitromethane.

Summary

All aerosol products containing primary or secondary alcohols and propellant 11 run the risk of serious deterioration under certain conditions. The inclusion of air, while beneficial, does not prevent corrosion taking place after a moderately long storage period. Experiments have demonstrated that this defect can be minimized by the use of nitromethane which is best added as a 0.3 per cent solution in propellant 11. Toxicity studies have shown no difference between this inhibited and uninhibited propellant 11.

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1. Sanders, Paul A., "The Reaction of Trichloromonofluoromethane with Ethyl Alcohol," Proceedings of the Forty-Sixth Mid-Year Meeting of the Chemical Specialties Manufacturers Association, Inc., page 66 (May, 1960), and *Soap and Chemical Specialties 36*, page 95, No. 7 (July, 1960).
2. Fuson, R. C., "Advanced Organic Chemistry," John Wiley & Sons, New York (1950).
3. N. P. Technical Data Sheet No. 2, Commercial Solvents Corporation; (January, 1961).

★

New Crown Coating Method

"Spra-Clad" 16 ounce aerosol can, a new development in internal coating systems for fabricat-

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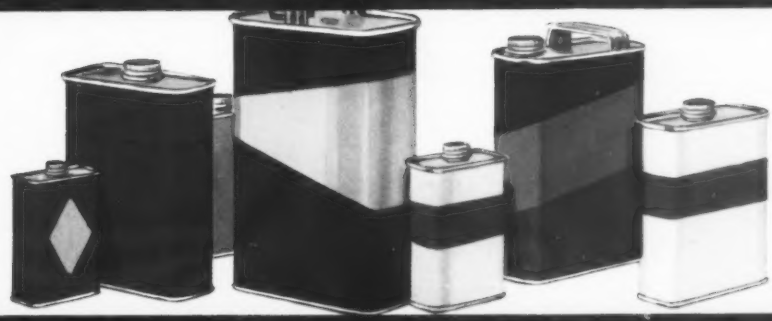

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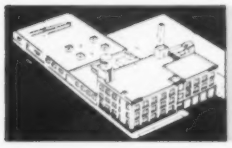


ACRES OF AEROSOL PACKAGING FACILITIES

ed aerosols, has been introduced by Crown Cork & Seal Co., Philadelphia. The new product, similar to Crown's "Spra-trainer," is coated in the flat prior to fabrication, and coated internally after the body has been formed in the round. This new method is said to eliminate interior coating scratches that could occur in the can body fabricating process. "Spra-Clad" cans with outside tab construction are available with various coatings designed for compatibility with the product to be dispensed.

—★—

Clutch Attachment Adapter

A clutch attachment, now being marketed by the National Instrument Co., Baltimore, Md., can adapt any of its "Filamatic Portable Fillers" for automatic conveyor line operation, the company states. Factory installed, the attachment is available in maintained or momentary contact types. The "Filamatic" can dispense a single, preset volume of liquid each time an actuator switch is momentarily depressed. With the maintained contact type, the liquid is dispensed either with momentary or maintained closure of the actuator switch. An example of the latter is the automatic filling of a perfume and propellant into aerosol spray bottles, shown at Armstrong Laboratories, Boston, Mass. The bottles are transported to the filling nozzles on an intermittent motion conveyor. At the filling station, the bottles depress a microswitch, which actuates an air cylinder to lower the nozzles into the bottles. Another microswitch is actuated which cycles the "Filamatic Filler" and dispenses a single-preset volume of the perfume-propellant mixture.

—★—

Make Your Own Aerosol Kit

"Aero/Match Spray Brush," a unique make-your-own aerosol unit, said to spray any liquid or powder, including high viscosity paints, has been introduced by De-Mert & Dougherty, Inc., Chicago. The product is put in a glass container, linked to a power unit by a plastic tube, and sprayed. The unit will spray any cleaner, deodorant, polish, ink, insecticide or weed killer, the company states.

One can of "Spray Brush" propellant will disperse the same amount of paint as 2.3, 16 ounce cans of aerosol paint, while giving approximately 22 per cent more coverage than 2.8, 16 ounce cans, the company reports. All "Spray Brush" units consist of a 15 ounce non-toxic, non-inflammable propellant and a spray brush, and retail for $2.49.

New make-your-own aerosol unit from Demert & Dougherty, Inc., Chicago.

—★—

Benedict to Pennsalt

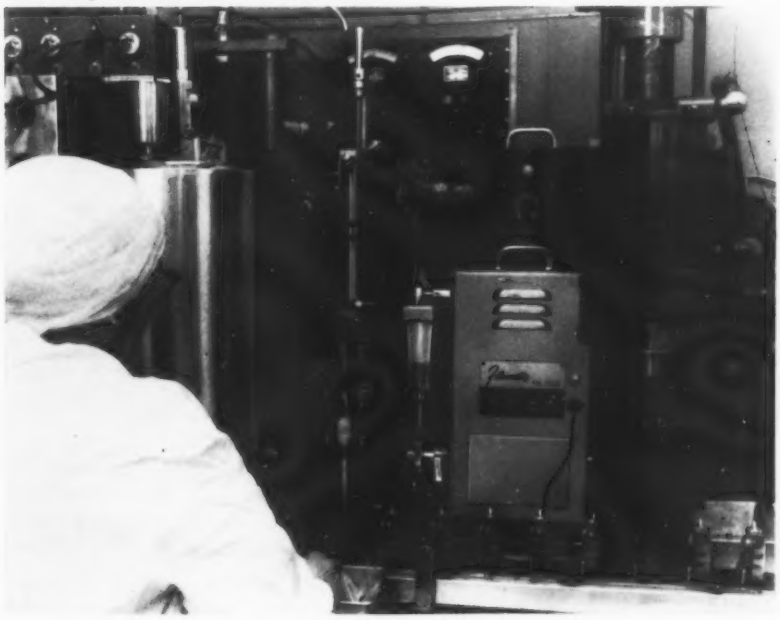
The appointment of Herbert Benedict as a midwestern sales representative for the Isotron department of Pennsalt Chemicals Corp., Philadelphia, was announced late last month. Assigned to the north central states area including Chicago, northern Illinois, Wisconsin and Minnesota, he will represent the firm's lone of "Isotron" aerosol propellants and refrigerants.

Mr. Bennedict comes to Pennsalt from R. Hoe & Co., where he was a member of the sales staff from 1958 until June of this year.

He is a native of Chicago and served for over three years in the U. S. Navy during World War II.

Herbert Benedict

A clutch attachment introduced by National Instrument Co., Baltimore, Md., is said to adapt any of the firm's "Filamatic Portable Fillers" for automatic conveyor line operation. Available in maintained or momentary contact types. Photo taken at Armstrong Laboratories of Boston, Mass.



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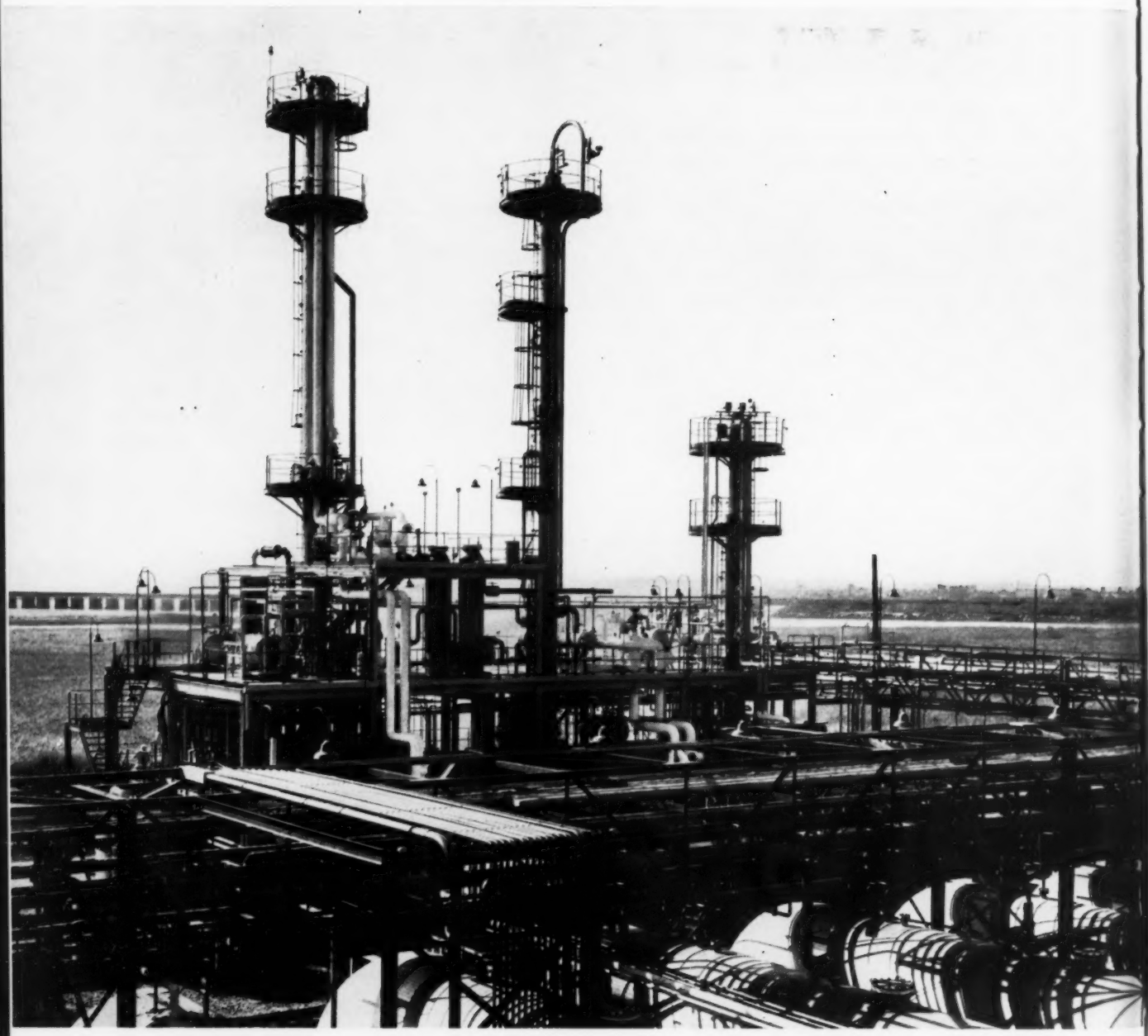

Above: General Chemical's brand-new "Genetron" plant in Elizabeth, New Jersey has a capacity of more than 10,000 tons of "Genetron" per year. Its output will serve consumers throughout the Northeast. This large new plant is the third "Genetron" facility serving industry. It supplements production at Danville, Illinois, and Baton Rouge, Louisiana. These three highly efficient, big-capacity plants are three good reasons why General Chemical is your *dependable* source for highest quality fluorocarbon refrigerants and aerosol propellants. Be sure—always specify "Genetron."

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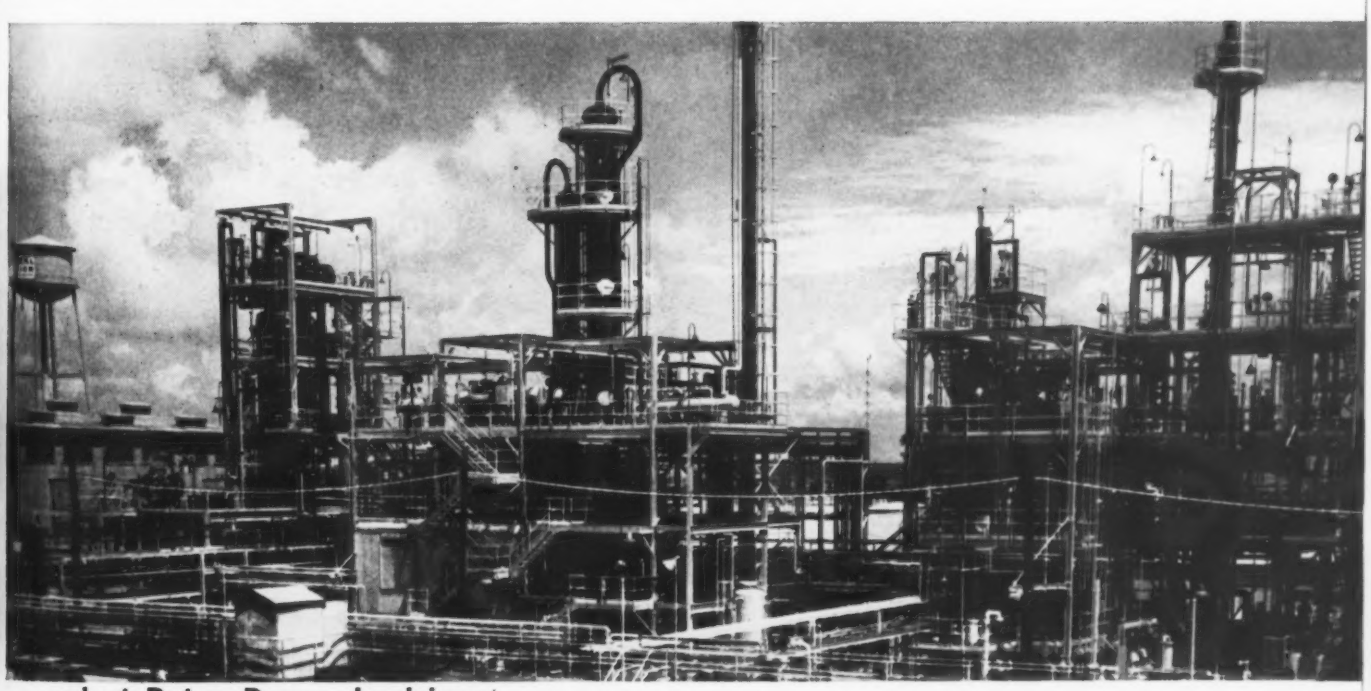

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Book Reviews

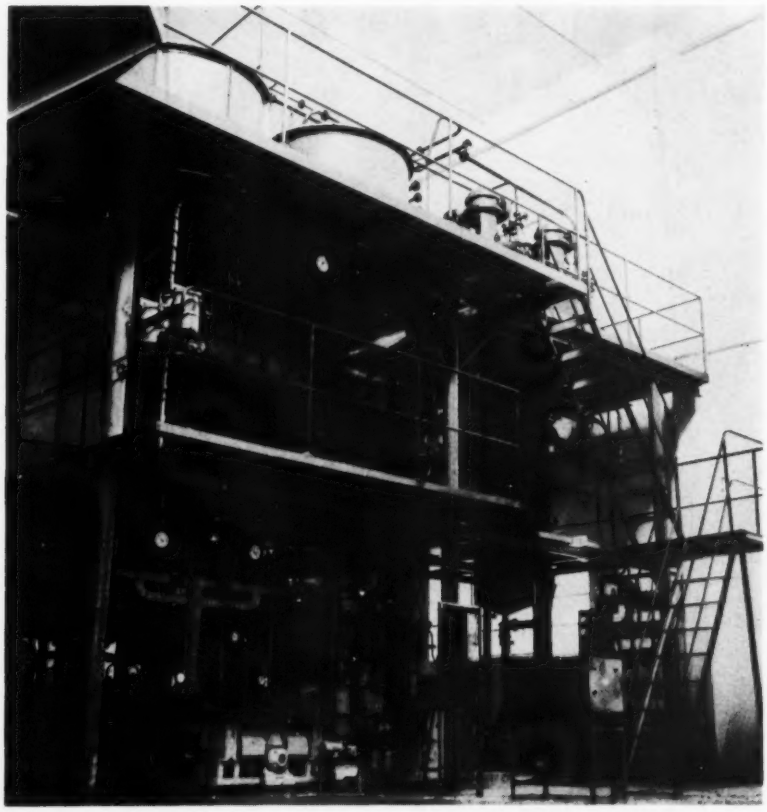
Bulletins and Equipment

"Ajax" powdered cleanser processed at the Jersey City plant of Colgate-Palmolive Co. is passed through novel centrifugal mill by Entoleter, Inc., New Haven, Conn. Unit seen here is mounted on top of surge mixer. Partially blended cleanser ingredients enter mill for complete homogenization, then drop into the ribbon type surge mixer below for continued mixing and aerating action. For details see article beginning on page 147.

G. MAZZONI S.p.A., BUSTO ARSIZIO, Casella Postale 421 (Italy)

Continuous and Automatic Saponification Plant For Fatty Acids.

Production capacities ranging between 500 and 6,000 Kilograms per hour



General view of the continuous and automatic saponification plant for fatty acids.

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G. MAZZONI S.p.A., BUSTO ARSIZIO, Viale Trentino 10/12, Casella Postale 421 (Italy)

Novel Mill for Colgate's Ajax Line

Novel centrifugal mill processing "Ajax" cleanser at Colgate's Jersey City plant improves product quality, speeds process and effects economies in plant and labor

A CENTRIFUGAL mill has replaced hammer - mill type pulverizers in processing of "Ajax" household cleansing powder at the Jersey City, N. J. plant of Colgate-Palmolive Co., New York.

Product quality as well as processing speed, economy, and efficiency of the "Ajax" production line have gained by the change, according to Colgate. Engineered and built by Entoleter, Inc., New Haven, Conn., the centrifugal mill combines mixing action with selective particle size reduction. It effects complete dry homogenization while reducing agglomerates and over-size particles to the specified size.

Basic ingredients of "Ajax" cleanser are extremely difficult to pulverize by hammer-mill action. They include:

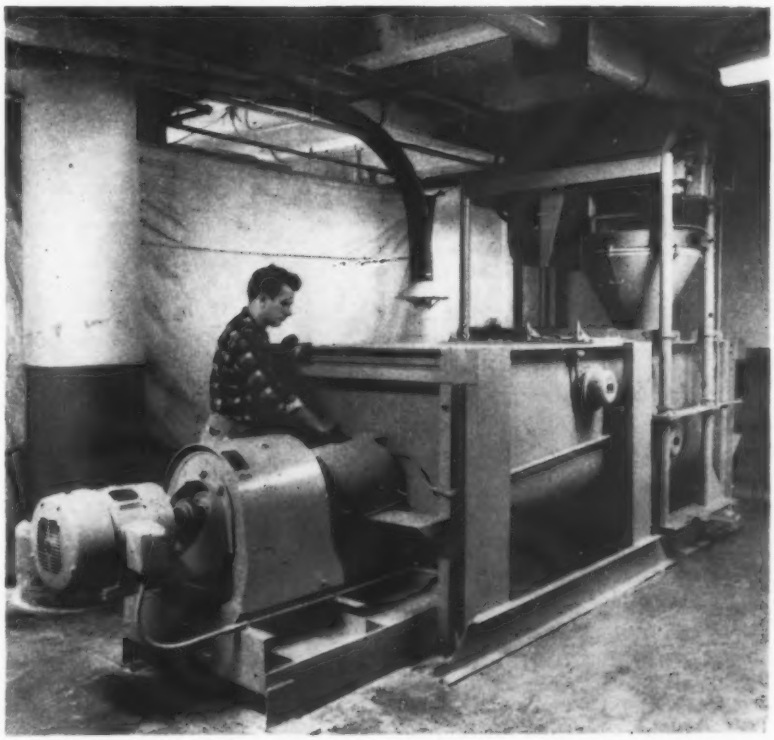
	per cent
Trichloro-S-triazinetrione	0.3
Sodium tridecyl benzene sulfonate	3.7
Trisodium phosphate	3.0
"Silex" (abrasive quartz)	93.0
Perfume	q.v.

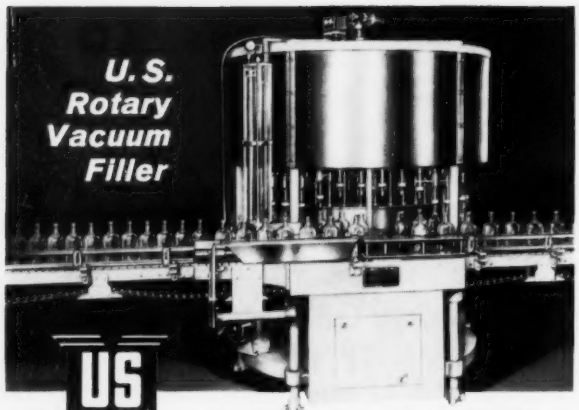
Trisodium phosphate comes as a grainy powder which does not meet the final product specifications. This is true also for sodium tridecyl benzene sulfonate and trichloro-S-triazinetrione, which is a chlorine releasing compound and acts as a bleaching agent. An additional problem is presented by the perfume being injected into the powdered mixture where it causes formation of agglomerates.

Blocking, packing, poor flow and lack of product uniformity were ever present problems when the hammer-mill pulverizer was used. Installation of the "Entoleter" mill makes possible for the first time true control of the line including the automatic packaging step.

First step in the manufacture of "Ajax" cleanser is the charging of the basic ingredients in preset proportions into a scale mounted "making" mixer. Actually, there are two such mixers which are alternately filled and discharged to bring this batch process as close as possible to a continuous operation. Allowing for filling time, mixing time, and dumping time, the combined throughput ca-

Fig. 1. "Entoleter" Series 27 centrifugal mill seen at right replaces hammer mill type unit in powdered cleanser line at Colgate's Jersey City plant. Mill reduces partially blended "Ajax" ingredients to uniform specified particle size. Homogenized powder then drops into surge mixer for continued mixing and aeration in readiness for automatic packaging operation.





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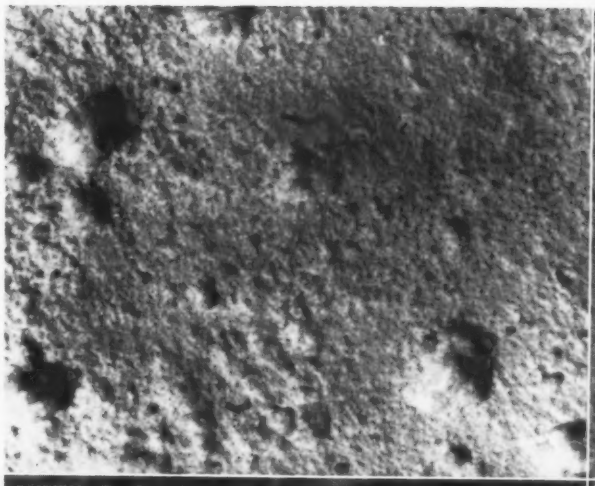

Figure 2: . . . (A) (top, left) "Ajax" cleanser before passing through the Entoleter Centrifugal Mill. Magnification, 16 times.

Figure 2: . . . (B) (top, right) "Ajax" cleanser after passing through the Entoleter Centrifugal Mill. Magnification 16 times.

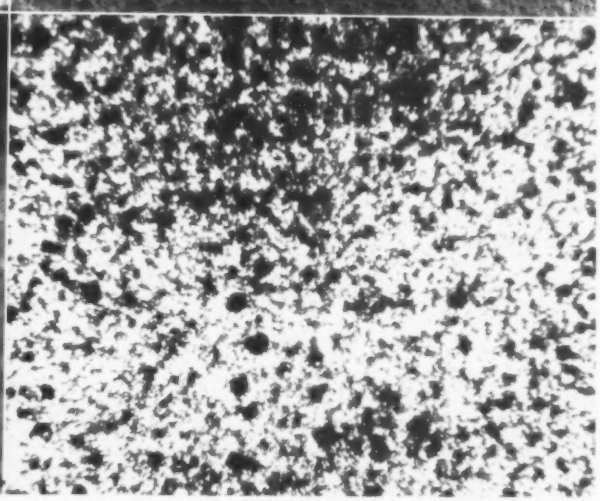

Figure 3: . . . (A) (bottom, left) "Ajax" cleanser before passing through the Entoleter Centrifugal Mill. Magnification, 60 times.

Figure 3: . . . (B) (bottom, right) "Ajax" cleanser after passing through the Entoleter Centrifugal Mill. Magnification, 60 times.

pacity of the two "making" mixers is about 35,000 pounds per hour.

The partially blended batch is discharged from the mixer and enters by gravity flow the inlet of the centrifugal mill, where deagglomeration and homogenization are completed. Here oversize particles are reduced to meet end product specifications (Figs. 2, 3). Mode of action of the "Entoleter" centrifugal mill is illustrated in Figure 4.

From the "Entoleter" mill the formulated and blended cleansing powder drops into a ribbon type surge mixer. Continuous agitation in the surge mixer keeps the powder stirred and aerated so that it will flow by gravity to the filling head of the packaging line.

High and low level alarms on the surge mixer inform the operator at the batch mixers how to time their operations.

Since the "Entoleter" mill has proved successful at Colgate's oldest and largest domestic plant the firm is reportedly installing additional centrifugal mills at other plants producing "Ajax" cleanser.

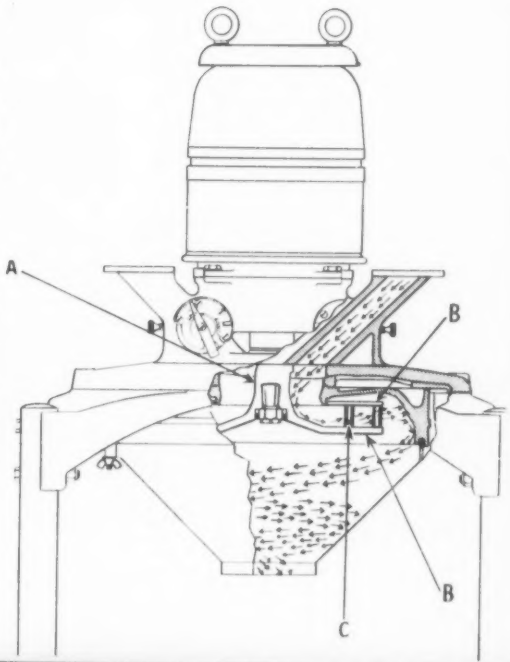

Fig. 4. Diagram of Entoleter action: Partially blended mix enters inlet by gravity, hits surface of spinning rotor (A) and slides out rapidly between top and bottom plates (B). Row of impactors (C) at rotor's periphery strike each particle with full shock impact, reducing agglomerations. Homogenization is completed when mix, having acquired high kinetic energy, strikes stationary impactors in target area.

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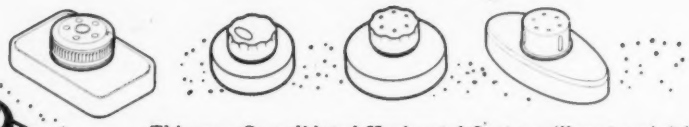

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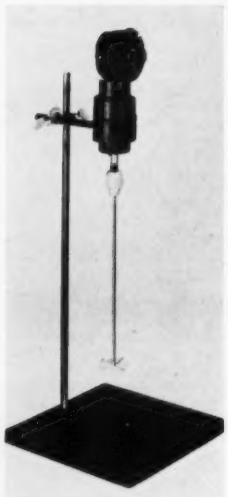

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soap plant observer

By Willis J. Beach,
Technical Service Department,
Sugar Beet Products Co.

IN the chemical specialties plant, counters of various types are widely employed in conjunction with automatic scales, meters, and other devices that provide measured and weighed quantities of materials for processing or packaging.

Electric counters, such as the "Productimeters" of Durant Manufacturing Co., Milwaukee, are useful for indicating weighed or dispersed batches, at a point remote from weighing operations. This might be a panel located in a supervisory office, or in another dry or dust-free location. Such counters are most generally pulsed by the closing of a microswitch or other type of actuator, suitable for use with an automatic weight or flow control system.

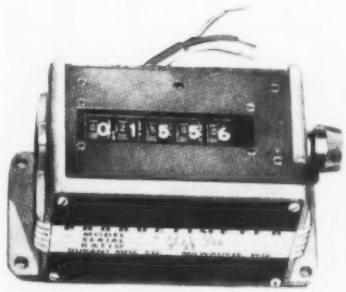
Electric counters can be arranged so that a predetermined total can be set up on small cam rings along side of the number wheels. (Fig. 1) When the preset total is reached, a self-contained switch is actuated which may control valves, pumps, or other controlling devices. A "Productimeter" observed in operation recently required only the turn of a small plastic knob to set the counter back

to zero so as to repeat the batch or number. (Fig. 2)

For use with scales and weighing hopper equipment, a heavy-duty type of counter is generally suggested. These devices attach directly to the linkage of a hopper scale, are dustproof and will withstand a considerable amount of rough usage.

Counters have a wide variety of applications around the plant and sometimes one may fail to realize just how versatile they are. They can be hooked up to spokes or sensing arms on conveyors to count containers or cases. Fitted with connecting rods or pins they can act as stroke counters on soap presses, or strokes on a piston type proportioning pump. Equipped with belt and sheave or direct coupling they act as revolution counters. Counters used with *on*-time accumulator devices are a convenient and reliable means of assessing production rates.

Fig. 1: The preset counter is designed to give accurate predetermined control on any electric counting installation such as packaging machines, bottling, can and case lines.



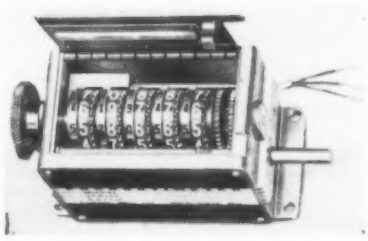
Gas Radiant Heaters

Although the warm weather is upon us, it is indeed time to start thinking about factory needs in the fall. Installation of infrared radiant heaters is often specified to offset cold drafts on the workers. These units provide effective spot heating for areas where there are cross drafts. The heaters are often installed near shipping room doors, in warehouses and service areas, and in large quonset-type buildings where spot heating is required.

Gas-fired radiant heaters are relatively new, and the author was impressed with the effectiveness of an installation of these heaters inspected on the occasion of a plant visit last winter. Such units, like all types of heating equipment, have their advantages and limitations. Properly employed, they can provide effective space and spot heating; but in the wrong location or incorretcly installed or maintained, they can create serious hazards to the industrial worker. A discussion with the safety director during our visit pointed up some of the hazards.

Radiant gas heaters of the unvented type should be installed only in well ventilated locations about the plant where unvented, open-flame combustion equipment is permitted. Like all other types of fuel burning heaters, they generate combustion products including carbon monoxide, dioxide, aldehydes and water vapor. In con-

Fig. 2: Predetermined counters have two sets of figure wheels. The presetting wheels are set by hand to the quantity desired for the run. The counting wheels add while the presetting wheels subtract. When the counting wheels reach the preset figure, the contactor in the counter makes or breaks a circuit.



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fined spaces, carbon monoxide concentrations from such heaters may exceed toxic limits of 100 ppm, and aldehyde concentrations may cause irritation of eyes, nose and throat. Build-up of moisture with dripping water droplets from cold surfaces may also be a problem.

Obviously, such heaters may be installed only on locations with ventilation adequate for removal of the products of combustion before levels dangerous to worker health and comfort can accumulate. Furthermore, they should not be installed in hazardous locations where flammable solvents and gases are present. Even though a screen, provided for the face of the unit, is intended to catch glowing particles which may become dislodged from the burner surface, it is not a flash arrestor and the units can ignite combustible mixtures in hazardous areas.

Selecting an R. and D. Man

The research department of a large organization looks for creative men—men rich in ideas. In the the small firm, the work is hardly research in the classical sense, but there sure is an awful lot of search and re-search to it at times. However, some traits are required both in the large and the small organization:

(1) *Perception and Sensitivity:* An acute awareness of cause and effect – and also of people's feelings;

(2) *Tolerance:* Acceptance of those seemingly better off or more talented than himself, as well as of those less gifted; and the ability to cope with situations in which he does not have all of the facts;

(3) *Penetration:* Ability to abstract, to boil things down, and to get to the heart of the matter;

(4) *Persistance:* He knows that it is only by grim determination and patient effort that we move on to better things;

(5) *Wide Comprehension:* The ability to coordinate, converge and apply the principles of interrelated sciences to the problem.

(6) *Open-Mindedness:* He is open to inspiration both from within and without, but he strives for objectivity and freedom from bias;

(7) *Drive:* He is able to make headway under his own steam.

(8) *Flexibility:* He is not married to a concept, and idea, or a system; both his emotional and thinking forces are always on tap;

(9) *Good Health:* He has good living and thinking habits to help his mind and body maintain a high power factor.

—★—

IBI Gluconic Acid Data

Specifications, properties, and uses of gluconic acid, technical grade, are described in a four page bulletin just published by Industrial Biochemicals, Inc., Edison Industrial Center, U. S. Highway No. 1, Edison, N. J. The acid of commerce is a 50 per cent aqueous solution.

Gluconic acid is used in a wide variety of cleaning applications: As an ingredient in bottle washing compounds, where it is formulated with liquid caustic soda to prevent hard water scales and spots; as a beerstone remover and preventive in brewery cleaning applications; in dairy cleaning formulations where it removes milkstone and other deposits. Another chemical specialty use is an additive to algaecides containing copper sulfate. These and other applications of gluconic acid are covered in the IBI bulletin which supplies in each instance the pertinent patent references.

Technical assistance and further information are available to actual and potential users of gluconic acid from Industrial Biochemicals' technical service department.

—★—

Carbide Data on Alcohols

Typical formulations for household chemical specialties, detergents, toiletries, etc., are included in a new 80 page booklet describing properties and uses of industrial alcohols. Just published

by Union Carbide Chemicals Co., 270 Park Avenue, New York 17, the brochure also supplies information on physical properties; constant boiling mixtures; specification limits; storage; handling; toxicology; and other pertinent data.

The alcohols described in this booklet are used in many chemical specialties and industrial applications. Anti-freeze formulations, perfumes, cleaners, polishes, defoaming agents, are just a few examples incorporating alcohols. Surface active agents, lubricants, pesticides, and pharmaceuticals are among the products requiring alcohols as intermediates.

—★—

Calgon Bulletin

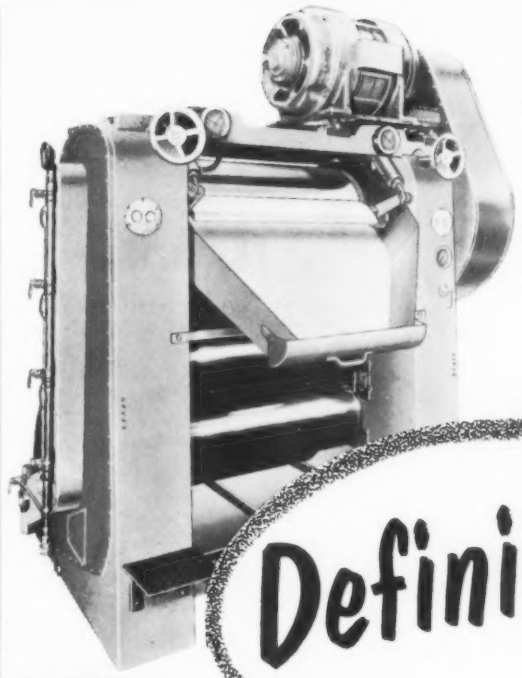
"Soak-Eze," a specially formulated detergent for presoaking of stainless steel, silver, china and plastic wares prior to machine washing, is the subject of a new bulletin from Calgon Co., a division of Hagan Chemicals & Controls, Inc., Hagan Center, Pittsburgh, 30.

The use of "Soak-Eze" in the pre-soak reduces the time spent on hand polishing and burnishing of silverware, and eliminates double washing of table ware, the manufacturer claims. The new detergent's special formulation provides instant detarnishing of silverware and penetrates and softens hard to remove food and soil residues, it was reported.

—★—

Three New Airco Bulletins

Three new bulletins were recently issued by Air Reduction Chemical & Carbide Co., a division of Air Reduction Co., New York. The first, an eight-page bulletin entitled, "Airco – Organic Chemicals and Colton Polymers," gives information on a large group of products, ranging from calcium carbide to organic compounds and special-purpose resins. Also available are a six-page bulletin, entitled "Colton Polymers," and a four-page bulletin, entitled "Airco Organic Chemicals."



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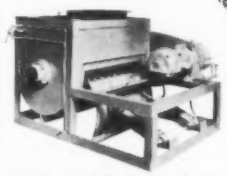
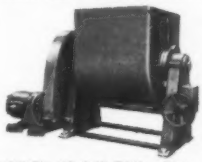


MODEL 40 G-B Bottom Dump Amalgamator.

MODEL 310-P Preliminary Plodder.

MODEL 310-F Finishing Plodder.



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New Gottscho Bottom-Coder

"Sideline Markocoder No. 3," a conveyor attachment for coding the bottoms of large containers, has been announced by Adolph Gottscho, Inc., Hillside, N. J.

The unit is designed for cans, canisters, bottles and other cylindrical containers measuring up to 10 inches in height and up to five inches in diameter. It is said to work equally well on flush or recessed, flat, stacker or concave bottom surfaces, and is suitable for tall aerosol cans.

The coder can be attached to can or bottle conveying lines, and operates automatically by force of the product stream at speeds of up to 150 units per minute. The unit features a quick method of changing types, and uses inks of various colors, the company states.

—★—

Plastic Bottle Label Unit

Electrically produced oxidation, a new way to prepare plastic surfaces for printing, silk screening or labeling, is provided by a new machine recently introduced by Lectro-Treat Co., St. Louis. The unit, tradenamed "Lecto-Treat," bombards plastic with electrical energy, causing the surface to oxidize sufficiently to permit adhesion of inks and glues.

The company states that objects of all sizes and shapes, including bottles, vials, and novelties, can be treated without difficulty. Costs are said to be lower than those for the flame treating or lacquer coating methods now in general use. The electrical treating procedure can be precisely regulated, and is said to be clean and safe.

The unit is approximately six feet long, 30 inches wide, and four feet high. It can be incorporated into a conveyor line and adjusted to the production rate. The oxidizing machine operates on 110-volt current at eight amperes.

—★—

New Sindar Bulletin

Sindar Corp., 321 West 44th St., New York, recently announced the publication of technical bulletin H-7, on the subject of "G-11" (Hexachlorophene U. S. P.). The new bulletin, entitled "Methods of Analysis for the Quantitative Determination of "G-11," includes a detailed description of titrametric determination; colorimetric determination, and ultraviolet methods.

Nopco Issues Brochure

Wetting and surface active agents and their uses in industry are listed and described in a 11 page booklet just issued by Nopco Chemical Co., 60 Park Place, Newark, N.J. Applications in the manufacture of chemical specialties, textiles, paper, and a number of other industries are described.

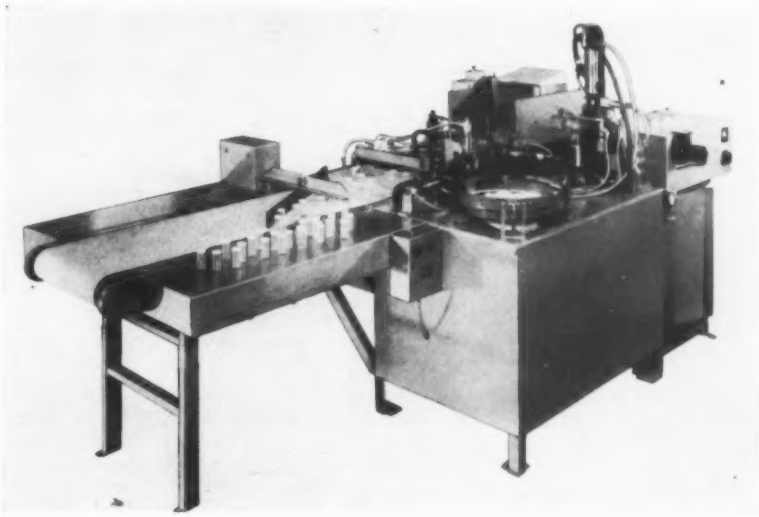
Among chemical specialties incorporating Nopco anionic or nonionic surface active and wetting agents are household detergents and cleaning compounds, shampoos and other toiletries and formulations intended for dust allayment, wallpaper removal, bottle washing, and metal cleaning.

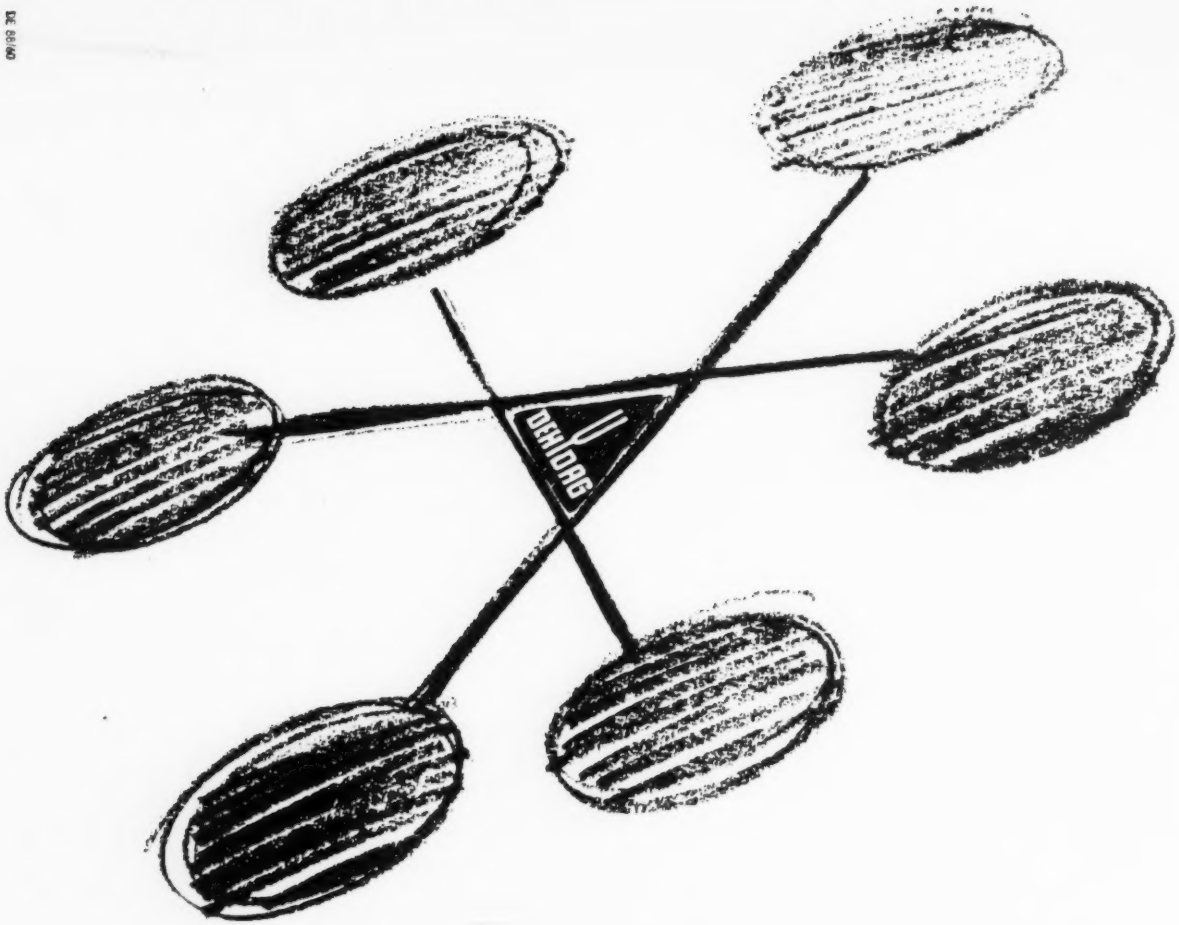
—★—

New Snell Abstract

"Polymer Market Abstracts" a new comprehensive marketing service is now being offered to the polymer industry by Foster D. Snell, Inc., 29 West 15th St., New York. Major materials such as polyethylene and polypropylene have separate sections devoted to them, while all primary raw materials are included in the coverage. Concentration of the new abstract is upon industrial markets, with consumer items and their manufacturers omitted. Cost of this marketing service is $36.00 a year.

New "Lectro-Treat" plastic labeling machine, recently introduced by Lectro-Treat Co., St. Louis. Unit bombards plastic with electrical energy, causing the surface to oxidize sufficiently to permit adhesion of inks and glues.





Dispersing, wetting and foaming agents, basic materials for sachet shampoos, toothpastes and powder dentifrices

TEXAPON K 12
TEXAPON K 14
TEXAPON Z
TEXAPON Z highly conc.

Basic materials for emulsion shampoos, detergents and synthetic soap tablets

TEXAPON Z highly conc. needles
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will not irritate the skin with which they are completely compatible.

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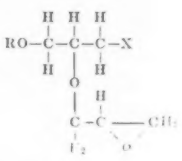
DISTRIBUTORS IN CANADA: Canerpa Ltd., – Suite 223, Drummond Building, 1117 St. Catherine Street West – Montreal • Canerpa Ltd. – 137 Wellington Street West – Toronto

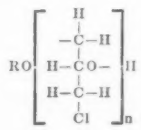
new patents

Listed below are brief abstracts of recently issued patents. Complete copies may be obtained from the publisher of this magazine: — Mac-Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y. Remit 50¢ for each copy. For orders received from outside of the United States send $1.00 per copy.

No. 2,989,547. Method for Preparing Detergent Compositions, patented by David D. Whyte, Wyoming, O., assignor to Procter & Gamble Co., Cincinnati. This patent claims a composition of matter consisting essentially of a mixture of substantially inorganic-salt-free glycidyl ethers containing at least 10% and not more than about 30% by weight of glycidyl ethers of the formula

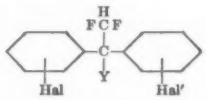


where R represents an alkyl radical of from about 10 to about 20 carbon atoms and X is selected from the group consisting of —Cl and —OH, the said mixture of glycidyl ethers being the substantially inorganic-salt-free products obtained from reacting a fatty alcohol having from about 10 to about 20 carbon atoms with an amount of epichlorohydrin at least 5% in excess of the molar amount required to form alkyl monochloroglyceryl ether and sufficient to form a mixture of high molecular aliphatic chloroglyceryl ethers of the formula

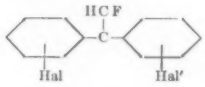


where **n** is an integer from 1 to 4, said chloroglyceryl ether mixture containing at least about 10% and not over 30% by weight of a high molecular aliphatic chloroglyceryl ether corresponding to the above formula where **n**=2, treating the said chloroglyceryl ether mixture with an aqueous alkali metal hydroxide solution having a concentration of from about 25% to about 50% to epoxidize the said chloroglyceryl ether mixture, thereby forming the corresponding glycidyl ethers, settling the resultant mixture to stratify the epoxidized ether and aqueous phases present, and separating the stratified epoxidized ether mixture.

No. 2,990,321. Bis-Halophenyl)-Fluoroaliphatic Compounds as DDT Synergists, patented by Joseph Bornstein, Brighton, Mass., Murray S. Blum, Baton Rouge, La., and John J. Pratt, Jr., Wayland, Mass., assignors to the United States of America as represented by the Secretary of the Army. This patent teaches a method of killing DDT-resistant insects which comprises contacting them with a synergistic insecticidal composition comprising as its essential active ingredients DDT and a member of the group consisting of a compound having the formula:



wherein Hal and Hal' are halogen atoms having an atomic weight not above 80 and wherein Y is a member of the group consisting of hydrogen, hydroxyl and acetoxyl, and of a compound having the formula:



wherein Hal and Hal' have the same meanings as aforesaid.

No. 2,989,435. Method of Chemical Sterilization of Aqueous Liquids Containing Bacteria or Spores of Bacteria, patented by Jacobus Nicolaas Walop, Jan Jacobs, and Cornelis Albertus de Bock, Weesp, Netherlands, assignors to North American Philips Co., New York. The invention deals with 1. A method of sterilizing aqueous liquids containing spores of bacteria comprising, treating said liquids with β-propiolactone in a concentration of about 0.5 to 0.001% by weight.

No. 2,988,471. Stabilization of Active Chlorine Containing Solutions, patented by Robert J. Fuchs, Clark Township and Irwin A. Lichtman, Oradell, N. J., assignors to Food Machinery & Chemical Corp., New York. Described is the method of stabilizing an aqueous solution containing active chlorine against decomposition by ultraviolet light, and by contact with iron and copper, which comprises adding to the solution a compound selected from the group consisting of cyanuric acid, ammelide, and their salts, in greater weight concentration, expressed as acid, than the concentration of available chlorine in the solution.

No. 2,986,492. Antimicrobial Compositions, patented by William N. Cannon, Greenwood, Ind., assignor to Eli Lilly and Co., Indianapolis. Patented is the method of preventing microbial contamination of an aqueous organic colloid which comprises incorporating in said colloid about 50 to about 200 p.p.m. by weight of a member of the group consisting of ethylmercurithio-salicylic acid and its water-soluble salts, and about 1,000 to about about 2,000 p.p.m. by weight of a member of the group consisting of o-phenylphenol and its water-soluble salts.

No. 2,988,510. Non-Dusting Detergent and Bleaching Composition, patented by Jay C. Harris, Thomas C. Tesdahl, and Richard M. Anderson, Dayton, O., assignors to Monsanto Chemical Co., St. Louis, Mo. Revealed is a dry granular composition which comprises between about 25% and about 60% of sodium tripolyphosphate, between about 10% and 60% of sodium silicate, between about 20% and 60% of sodium sulfate, between about 0.05% and 10% of an active organic chlorine-containing compound and about 0.1% to 10% by weight of a silicone selected from the group consisting of methyl silicones, ethyl silicones, phenyl silicones, ethylphenyl silicones and combinations thereof, the said silicone having a viscosity of from 0.2 to 1,500 centistokes at 100°F.

Also covered is the method of inhibiting the decomposition of active organic chlorine-containing compounds which comprises contacting the same with a silicone selected from the group consisting of methyl silicones, ethyl silicones, phenyl silicones, ethylphenyl silicones and combinations thereof, the said silicone having a viscosity of from 0.2 to 1,500 centistokes at 100° F. the said silicone being employed in the proportions of from about 0.05% to about 10% by weight of the overall composition.

No. 2,982,737. Detergent Bars, patented by Fred E. Boettner, Philadelphia, and James L. Rainey, Abington, Pa., assignors to Rohm & Haas Co., Philadelphia. In the method of manufacturing a detergent bar from 50 to 70 parts by weight of urea, 20 to 30 parts by weight of an amide from the group consisting of N-methyl-N-sorbityl lauramide and N-methyl-N-sorbityl myristic acid amide, and 30 to 40 parts by weight of sodium lauryl sulfate, the invention covers the steps which consist of heating the amide and the urea together until a reaction takes place and a clear melt is formed, intimately mixing the sodium lauryl sulfate with the total product of that reaction to again form a clear melt, cooling until the mixture can readily be kneaded, and kneading until the mixture becomes sufficiently stiffened to be formed into the desired bar shape.

Pennsalt Aquatic Herbicide

"Aquathol," a contact action aquatic herbicide, said to be effective against a great range of water weed infestations, and not harmful to fish when applied in recommended dosages, has been introduced by Pennsalt Chemicals Corp., Philadelphia. Product is said to destroy underwater weeds, floating weeds, and algae by contact action as compared to other herbicides which, when absorbed into the system of the plant, kill by slow hormonal action.

The average dosage for most aquatic weeds is at one and two parts per million strength which is far below the point of toxicity to fish. In addition to offering control of a wide range of aquatic weeds, the new Pennsalt product is said to have the advantages of ease of application, quick action, safety, short residual life and economy. When used as directed there is no danger of residual accumulation or toxic build up, the company states.

"Aquathol" is produced in granular and liquid forms for controlling different weed situations. Granular "Aquathol G," which diffuses less rapidly than the liquid form, is recommended where a slight movement of water occurs such as sections of lake fronts and areas around docks and piers. It can be spread by hand scoops for small areas or mechanical spreaders for larger areas. It is available in 50 pound bags.

Free floating surface weeds and filamentous algae mats can be controlled best with liquid "Aquathol" applied by spraying on the surface. It is packaged in 30 gallon drums and five gallon cans. A five gallon can of the product will treat a one-half acre pond averaging four feet deep, at two parts per million, the strength which kills most common water weeds, the company states.

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New Hagan Bulletin

A bulletin just issued by Calgon Co., division of Hagan Chemicals & Controls, Inc., Pittsburgh, describes "Liqua-Clean," an "instant action," all-purpose detergent for manual washing of heavily soiled dishes, pots, pans and silverware. The detergent is also suggested for washing of ranges, tables, walls and floors. According to the bulletin, metal wares rinse freely and dry bright without toweling.

"Liqua-Clean" is said to require no stirring or hot water for dissolving. One third of an ounce to a gallon of water is recommended for average work; one fifth to one tenth of an ounce for lighter work. Available in 15 gallon drums and five gallon cans.

—★—

New Nozzle Bulletin

Spraying Systems Co., Bellwood, Ill., has published their new Bulletin 108, featuring "Spraydry Nozzles" for spray drying. The 12-page booklet describes the company's complete line of nozzles for spray drying detergents, chemicals and related products.

HERE'S A MIXER THAT GUARANTEES A CONSTANT UNIFORM MIX.

The MARION MIXER mixes to Laboratory uniformity . . . Consistently through its Exclusive Mixing and Blending Action.

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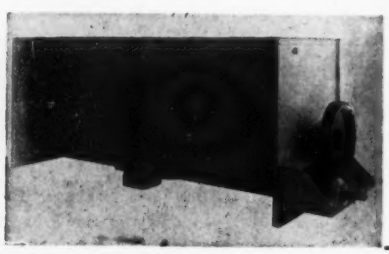
The Marion Mixer is engineered for precision mixing and turns out TOP QUALITY mixed products for chemical manufacturers everywhere. The Marion Mixer is recommended for mixing the Lightest or Heaviest Materials. Its simple, efficient design is rugged enough to handle any volume of mixing large or small . . . and at the same time, it constantly safe-guards your formula mixes from loss of uniformity. Laboratory tests have proven that even trace materials can be blended into the most complicated industrial chemical formulas, and pass individual analysis tests for the most even batch distribution possible.

When replacing worn-out Mixers — Expanding your Mixing Operations — Adding new mixed products to your line, it will pay you to investigate the distinct advantages of the Marion Mixer. There is a Marion Mixer for any Chemical Mixing Operation.



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products and processes

Plastic Syndet Bars

Brittleness and dull appearance of synthetic soap bars may be improved by incorporation of one or several plasticizers. These plasticizers consist of primary fatty alcohols having more than 16 carbon atoms and melting point above 40°C. Higher primary aliphatic alcohols, glyceryl mono- and di-stearates, hydrogenated castor oil and similar materials may be incorporated in the formulation.

Potassium alkyl sulfates formulated with 10 to 50 per cent by weight of plasticizing additives will yield an end product of good appearance and plasticity. Compositions containing less than 10 per cent water show superior translucence and resistance to cracking and splitting. British patent 858,-075, Soc. Belge De L'Azote et Produits Chimiques, Liege, Belgium.

—★—

Detergent-Decontaminant

Radio-active metal contamination may be removed from objects and materials by a detergent composition consisting of a synthetic surface active agent, a water soluble nitrogen free polycarboxylic acid, and an alkali metal or ammonium base. British patent 856,-377, United Kingdom Atomic Energy Authority, London.

—★—

Acids and Anhydrides Data

A new 48 page brochure describing uses and properties of organic acids and anhydrides has just been published by Union Carbide Chemicals Co., 270 Park Avenue, New York 17. The booklet covers acetic, propionic, butyric, 2-ethylbutyric, 2-ethylhexoic, acrylic, sorbic, valeric, and isodecanoic acids; acetic, propionic and butyric anhydrides.

Detergents, emulsifiers, floor polishes, insecticides, fungicides, and herbicides are included among the numerous applications of these organic acids or their derivatives.

Anhydrides play a part in the manufacture of brake fluids, perfumes and odorants, fly baits, weed killers, fungistats, and numerous other products.

—★—

Rug Shampoo Formulations

A rug shampoo based on synthetic detergents and another based on a soap/solvent combination are suggested in a booklet on industrial alcohols published recently by Union Carbide Chemicals Co., New York.

The syndet based formula contains the following components:

	parts by weight
Oleic acid	28.0
Coconut oil fatty acids	21.0
Isopropanol, anhydrous	30.0
Triethanolamine	14.0
Monoethanolamine	6.8
"Tergitol Nonionic NPX" (Carbide)	5.0
Water	15.0

To prepare, mix oleic acid, coconut oil fatty acids, and isopropanol. Add the amines and "Tergitol Nonionic NPX" and stir until thoroughly mixed. Add water, which will produce a clear liquid.

The soap/solvent rug shampoo has the following ingredients:

	parts by weight
Oleic acid	28
Ethylene dichloride	13
Isopropanol, anhydrous	14
Butyl "Cellosolve" (Carbide)	5
Triethanolamine	16
Water	125

Procedure: Mix oleic acid, ethylene dichloride, isopropanol, and butyl "Cellosolve"; and add the amine. Stir until thoroughly mixed and add the water. If the mixture is cloudy, add sufficient isopropanol to clear it. An emulsion made of equal volumes of the soap and water is recommended for cleaning rugs and carpets.

Warning: Adequate ventilation must be provided and special care taken to avoid inhaling vapor and repeated contact with the skin, when chlorinated solvents are used.

New Soil Suspending Agent

Sulfomethylcellulose is suggested as a soil suspending agent for nonionic, anionic and amphoteric detergent compositons by a Swedish inventor. Claimed to be at least as efficient in this application as CMC, sulfomethylcellulose is said to be easier to prepare. Good cleaning and brightening effects are claimed to result from additions of 0.1 to three per cent by weight of the water soluble sodium salt of sulfomethylcellulose to detergent formulations. British patent 846,-217, Mo Och Domsjo A.B. Ornskoldsvik, Sweden.

—★—

Silicones for Shampoos

Liquid silicones added at the rate of four per cent by weight to shampoo formulations are claimed to improve the performance properties of such products.

Shampoos in liquid, paste or powder form and based on soap or synthetic detergents such as alkylaryl sulfonates, fatty acid alkanolamides or mixtures of these surfactants, may be formulated with liquid silicones. Additions may range from 0.5 to 15 per cent by weight. The finished product is said to impart a sheen to the hair, improve setting properties and cut the time required for drying the hair after shampooing. British patent 849,-433, R. Woolston, Creeting St. Mary, Suffolk, England.

—★—

Aliphatics by Armour

"Aliphatic Organic Chemicals for Refined Products and Processes" is the title of a new illustrated eight page brochure just published by Armour Industrial Chemical Co., 5738 North Central Expressway, Dallas 6, Tex.

The booklet describes Armour's line of cationics for use as additives for gasoline, fuel oil, lubricants, and asphalt.

R&H Acrylic Developments

Availablity in pilot plant quantities of a new acid containing acrylic emulsion polymer for use as a thickener has just been announced by Rohm & Haas Co., Philadelphia 5. "Experimental Thickener ASE-95" is suggested as a thickener for aqueous systems, such as surfactant solutions, and for polar solvents. It serves as a stabilizer for compounds based on nonionic surfactants such as detergents and wax cleaners and strippers, according to Rohm & Haas. Other actual and potential uses include suspension of abrasives and other finely divided solids and emulsification and emulsion stabilization in a wide variety of solvent/water systems.

At the same time, Rohm & Haas announced commercial availability of methyl acrylate and ethyl acrylate monomers of low inhibitor content. Inhibited with only 15 parts per million of monoethyl ether of hydroquinone, these monomers are claimed to withstand heating to 130°F. for at least 30 days without polymer formation. Heretofore these materials were supplied with inhibitor concentrations ranging around 200 parts per million. A number of processing advantages are said to result from the change.

For the present, Rohm & Haas will continue to supply the monomers with the higher inhibitor content as well as the new formulations.

The firm's special product; department will supply literature and pertinent details on both developments.

—★—

Stearic by New Process

Eutectic stearic acids of "unusually" good heat stability are said to result from a new processing method developed by Wilson-Martin Division of Wilson & Co., Philadelphia 48. Covered by U. S. patent No. 2,985,674, issued May 23, 1961, the process replaces "hot pressing" by ordinary distillation techniques.

The "double and triple pressed" eutectic stearic acids made by the new Wilson-Martin method contain less than nine per cent and usually less than five per cent by weight of fatty acids having less than 16 carbon atoms. The process, which uses tallow as a raw material, is available for licensing, according to a spokesman of the company who added that the new distillation method makes "hot pressing completely obsolete."

—★—

Jacques Wolf Catalog

Industrial chemical specialties and chemicals for the processing industries made by Jacques Wolf & Co., subsidiary of Nopco Chemical Co., 60 Park Place, Newark, N. J., are described in a new 16 page catalog. A wide variety of detergents, surface active agents and wetting compounds are included in the Jacques Wolf line.

The catalog lists each product, gives a brief description and thumbnail outline of its uses.

SOAP & CHEMICAL SPECIALTIES

Circulation Policy

and

"Readership Reports"

This publication sells subscriptions only at the full subscription rate and only by mail — does *not* offer cut price deals nor use the services of high-pressure subscription salesmen. Nor does it *list* its copy price at 50 or 60¢ each and then *actually sell* subscriptions at 3 or 4¢ per copy.

Because we do not "force" subscription sales, and because SOAP & CHEMICAL SPECIALTIES is edited for a specific industry and not for the purpose of coaxing in stray advertising, the magazine maintains an ABC subscription renewal rate year in and year out above 80% — currently 81.6%, to be exact.

Publications with renewal rates going all the way down to 50% or lower need "readership studies," either prepared by themselves or others, to try and convince advertisers and agencies that their books are being read. SOAP & CHEMICAL SPECIALTIES does not. If an ABC 81.6% subscription renewal rate is not convincing, it is quite unlikely that anything else will be.

The Publisher

DUAL PURPOSE
KP-140
leveling agent–plasticizer for floor polishes

Two test strips on black rubber tile show "drawing in" and crazing in floor polish films which do not contain KP-140. Tile on right shows same formulation with KP-140 added.

Nothing can match KP-140 for leveling. It gives excellent leveling in floor polish formulations—and plasticizing action as well. Years of testing—in the laboratory, in commercial use, in the home—have proven these properties conclusively.

Emulsion polishes formulated with KP-140 level out evenly and dry as a smooth, continuous film. There are no high and low spots in gloss. As a leveling agent-plasticizer, KP-140 is particularly important in acrylic- and polystyrene-based formulations. KP-140 is a major factor in overcoming streaking, crazing, powdering, water spotting and contraction of films. It prevents "puddling" and promotes flow.

To order KP-140, contact your FMC distributor or call us directly at MU 7-7400, New York. We'll speed your request to the office nearest you. Write for data sheet, prices, and a list of representatives with warehouse stocks.

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
Chemicals and Plastics Division
161 East 42nd Street, New York 17, N. Y.

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FOOD MACHINERY AND CHEMICAL CORPORATION

Proper leveling with KP-140 insures evenness of gloss. Photo courtesy of Robbins Floor Products Inc.

HAVE YOU A HERCULEAN TASK?

The greatest hero of Greek mythology, *Hercules* is a name that still provokes an image of rare courage and prodigious strength. Although the requirements of modern living call for a very different concept of problem solving . . . still today's industrialist faces many difficulties that could rightly be termed "Herculean in scope." More often than not these tasks find their solution in the skilled hands and modern laboratories of that 20th century Hercules, the research chemist. In the D&O Industrial Odorants Labs, for example, the perfume technician daily performs feats that in modern context equal that of the famed Greek hero. *Do you have an industrial deodorant or reodorant problem?* Let the D&O Product Development Laboratories relieve you of your Herculean task.

Hercules carries the pillars of Calpe and Abyla —Labors of Hercules

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News...

PEOPLE · PRODUCTS · PLANTS

Economics Appoints Cerny

* * *

William Connolly Dies

* * *

Lever Elects Webber

* * *

J. B. Williams Diversifies

Appointment of David J. Mahoney, Jr., as executive vice-president of Colgate-Palmolive Co., New York, was announced last month. He is responsible for direction and coordination of the company's toilet articles, household products and associated products divisions. Mr. Mahoney was formerly president of Good Humor Corp.

Periodic heat tests gauge color stability of ACINTOL® FA 3 Fatty Acid.

Arizona takes extra steps to bring you the most color-stable fatty acid

Arizona offers the lightest fatty acid at its price and ACINTOL® FA 3 keeps its color characteristics through heat processing. It is heat-tested at several points during production for color stability. The finished product is stored in aluminum tanks, under a protective blanket of inert gas. Tank cars and shipping drums have the gas blanket and a special lining to prevent color degradation.

In addition to extreme lightness and color stability, ACINTOL FA 3 offers high fatty acid content. Specially suited to soap industry needs, it is an economic replacement for oleic acid.

For data sheets, write Arizona Chemical Company, 30 Rockefeller Plaza, N.Y. 20, N.Y.

World's Largest Supplier of Tall Oil Chemicals

ACINTOL® Tall Oil Products, ACINTENE® and ARIZOLE® Terpene Products

NEWS

Economics Appoints Cerny

F. J. Cerny has been named vice-president in charge of the Institutional Sales Division of Economics Laboratory, Inc., New York manufacturer of commercial dishwashing compounds, it was announced recently.

Frank J. Cerny

Associated with the division since 1939, Mr. Cerny began as a salesman in Cleveland. In 1956 he was sent to New York as assistant sales manager, and later was named eastern sales manager. In 1960, he was national director of the division, and then promoted to vice-president.

—★—

Colgate Elects Mahoney

David J. Mahoney, (see cut, page 163) formerly president of Good Humor Corp., New York, has been elected executive vice-president of Colgate-Palmolive Co., New York, it was announced recently.

He is responsible for the direction and coordination of the company's toilet articles division, household products division, and associated products division.

Mr. Mahoney began his business career in 1946 with Ruthrauff & Ryan advertising agency, New York. In 1950 he established the David J. Mahoney, Inc., advertising agency, handling such accounts as Noxema Chemical and Good Humor Corp. In 1955 he became president of Good Humor Corp., and in 1961, when Good Humor was purchased by Thomas J. Lipton, Inc., he remained as head of the division for that company.

—★—

William Connolly Dies

William N. Connolly, 62, public relations vice-president of S. C. Johnson & Son, Inc., Racine, Wis., and former chairman of the board of the Association of National Advertisers, died July 8 in Racine, following abdominal surgery.

Mr. Connolly, who headed Johnson's advertising from 1929 to 1952, contributed substantially to the development of the firm's national advertising on radio and television. He was a director of Racine Hydraulics and Machinery, Inc., Racine, a director of the Audit Bureau of Circulation, and a member of the executive advisory committee of the ANA. He had been elected chairman of the board of ANA in 1948. Mr. Connolly had also served as a director of the Wisconsin chapter of the Public Relations Society of America, a director of the National Trade Mark Association and as a member of the Public Relations Committee of the U. S. Chamber of Commerce.

—★—

J. B. Williams Diversifies

J. B. Williams Co., New York, which acquired Landers, Frary & Clark, manufacturer of electrical appliances and housewares in May, will market an exclusive line of sundries under the trade name "Universal Handy Hannah Deluxe." The line includes coffeematics, steam irons, vibrators and massagers.

Lever Elects Webber

Harold H. Webber, vice-president and director of Cowles Magazines and Broadcasting, Inc., New York, has been elected consumer relations vice-president of Lever Brothers Co., New York, it was announced July 27. He was formerly an executive vice-president of Foote, Cone & Belding, New York advertising agency.

Harold H. Webber

Mr. Webber, who will also serve as a member of Lever's marketing committee, joined the company on August 15th. On that date Henry Schachte, executive vice-president and director of the company, is resigning to join Unilever, Ltd., London, as a member of the management committee of the Unilever Marketing Division. Mr. Webber will supervise the company's advertising, promotion, marketing research and public relations activities.

—★—

Penick Appoints Collins

S. B. Penick & Co., New York, recently announced the appointment of Richard M. Collins as sales representative for the metropolitan New York, Bronx and Westchester County area. Mr. Collins, who joined the firm in 1950, was formerly a sales correspondent.

McElroy Urges Caution on Tax Changes

Neil H. McElroy, chairman of Procter & Gamble Co., Cincinnati, giving testimony before the House Ways and Means Committee on June 7th, urged it to move slowly on enactment of an Administration proposal to impose U. S. tax rates on undistributed earnings of foreign subsidiaries of American companies operating abroad.

He said enactment of the proposal would be so serious a burden on U. S. overseas business that it should be delayed until a full study could be made of its effect on the national interest.

Mr. McElroy stated imposition of the 52 per cent U. S. rate would make it "tremendously difficult" for American-owned subsidiaries operating abroad to compete with foreign-based companies whose profits are not taxed until they are returned to shareholders as dividends. At present, U. S. law taxes earnings on this basis, but a proposal to tax foreign profits before distribution has been suggested by President Kennedy.

"Our nation's vast industrial and marketing strength and skill contribute powerfully to the free world's economic position," he continued. "The employment of our ability abroad should not now be discouraged. Instead, America's abilities need to be strengthened and accelerated."

Mr. McElroy stated that P&G would be less capable of operating and expanding its overseas business if it were placed in an unfavorable position with foreign competitors through higher taxes on undistributed earnings.

—★—

Hercules Names Monkman

James W. L. Monkman has been named to the newly created post of director of sales for plastics in the polymers department of Hercules Powder Co., Wilmington, Del., it was announced recently. He directs the sales activities of "Pro-fax" polypropylene, and "Hi-fax" high density polyethylene, both used for blown plastic bottles.

Mr. Monkman was formerly director of sales for the synthetics department, a post he had held since 1952.

—★—

McGuine Receives Award

A "Special Service Award" presented by the Fatty Acid Producers' Council, division of Association of American Soap and Glycerine Producers, Inc., New York, was awarded to Thomas H. McGuine, technical director of Wilson-Martin Division of Wilson & Co., Philadelphia, at the Council's 1961 annual summer meeting held recently in Hot Springs, Va.

Mr. McGuine received the award for his outstanding work during the past 18 months as chairman of the Fatty Acid Council's Technical Food Additives Committee, dealing with various problems resulting from Food and Drug Administration Food Additives regulations affecting fatty acids and fatty acid derived products.

The presentation was made by W. J. O'Connell of Humko Products, Memphis, chairman of the Council's Steering Committee. It was the first award ever presented by the Council since it was formed 10 years ago.

Thomas H. McGuine, right, chairman of the Technical Food Additives Committee, Fatty Acid Producers' Council, Division of Association of American Soap and Glycerine Producers, Inc., New York, is presented a "Special Service Award" by W. J. O'Connell, chairman of the Council's Steering Committee.

—★—

Adds Distribution Point

Eastman Chemical Products, Inc., Kingsport, Tenn., subsidiary of Eastman Kodak Co., has just concluded an agreement with Terminal Services Division of North American Car Corp., New York, to store and ship certain grades of ethyl alcohol at North American's Sag Junction terminal in Lemont, Ill. First Eastman alcohol to be handled by North American will be SDA-40 (anhydrous and SDA-3A (95 per cent). Bulk shipments will be made from this terminal to users in the Chicago area.

—★—

FMC Name Change

The name of Food Machinery and Chemical Corp., New York, has been changed to FMC Corporation, effective July 1, on aproval by the company's stockholders.

The new corporate name more appropriately covers the company's broad product base which includes many types of industrial and agricultural machinery, basic chemicals and defense material, as well as "food machinery" and allied equipment, the company states.

—★—

Gillette Earnings Up

Gillette Co., Boston recently reported net sales for the first six months of the year, ended June 30, at $123,744,927, as compared with $110,094,656, for the same period in 1960. Net income for the period was reported at $19,713,603, as compared with $17,215,999, for the same period last year. Earnings per share amounted to $2.10 for the first six monts of 1961, as against $1.84 in 1960.

The company declared the regular quarterly dividend of 62½ cents a share on the common stock, payable September 5, to stockholders of record August 1.

Nykiel 30 Years with C-P

John M. Nykiel, sales manager of the Associated Products Division of Colgate-Palmolive Co., New York, marked his 30th anniversary with the firm on July 5.

John M. Nykiel

Mr. Nykiel has served in virtually every phase of sales and marketing in the industrial area since he joined Colgate's industrial department in 1931. He was appointed regional manager for the midwest in 1948, and in 1951 became sales manager of the industrial department, which was renamed the Associated Products Division in 1957. This unit manufactures bulk soaps and detergents, specialty products, individual size toilet soaps, and glycerine for the use of hotels, laundries, institutions and industry.

Mr. Nykiel represents Colgate in the National Sanitary Supply Association, the Laundry Cleaners and Allied Trades Association, the Hospital Industries Association, the American Institute of Laundering, and the American Hotel Association.

★

ACS to Meet in Chicago

Government and industrial research chemists will gather for a symposium on methods to detect pesticide and chemical additive residues in food at the forthcoming 140th national meeting of the American Chemical Society. ACS is set to meet Sept. 3 through 8 in Chicago to hear more than 1600 scientific and technical reports; about 12,000 chemists and chemical engineers are expected to attend.

In addition to new developments in pesticides, the meetings will hear reports on advances in colloid and surface chemistry, microbial chemistry and technology, polymer chemistry, and a host of other fields.

Concurrently with the meeting, the 11th National Chemical Exposition will be held in Chicago's International Amphitheatre, starting Tuesday, Sept. 5.

★

Johnston Elected to CIA

James R. Johnston, treasurer, Bon Ami Co., New York, has been elected to membership in the Controllers Institute of America, New York, it was announced recently.

★

CIBS Hear Mayham

S. L. Mayham, executive vice-president of the Toilet Goods Association, was guest speaker at the July 13 Cosmetic Industry Buyers & Suppliers Association luncheon, held at the Hotel Pierre, New York. Mr. Mayham brought the group up to date on the status of legislation affecting the industry and current trends in cosmetics.

Mason Joins Krystall

William B. Mason has been appointed sales manager of Krystall Chemical Corp., Chicago, a subsidiary of Richardson Co., Melrose Park, Ill., it was announced recently. He was formerly western sales manager of Treplow Chemical Co., Paterson, N. J., a Richardson subsidiary.

William B. Mason

In recent years, Mr. Mason had been associated with Intex Chemical Corp., Lodi, N. J., as general sales manager, and Onyx Oil & Chemical Co., Jersey City, N. J., as Cleveland district sales manager.

Photo L to R: J. William Voit, George Lueders & Co., Inc., CIBS 1st vice-president; S. L. Mayham, TGA executive vice-president, Robert C. Ring, Duveen Soap Corp., CIBS president; Walter Morton, Hazel Atlas Glass Division, CIBS luncheon chairman.

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Liquid and powder detergents are doing so many jobs these days, it makes sense to be sure the surface active agent you use is best for your product application. Need an effective detergent? A dispersant? An emulsifier? A wetting agent? The extensive Poly-Tergent series of Olin surfactants gives you your choice.

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ORGANICS DIVISION Olin

Hanlon Chemical Sues Union Carbide

HANLON Chemical Co., Kansas City, Kans., manufacturing firm, has brought suit against Union Carbide Corp., New York, for one million dollars.

The suit alleges breach of confidential relations, unauthorized use of trade secret, unfair competition and infringement of the trademark of a Hanlon product for washing and waxing motor cars. In addition to punitive damages, the Hanlon Company seeks a permanent injuction to enjoin Union Carbide from engaging in the manufacture, sale or distribution of the product, a wash and wax car sponge.

The petition, filed in U. S. District Court, Kansas City, Kans., states that after several years of work and large expenditures, the plaintiff developed and sold — beginning in June, 1959 — a sponge containing certain ingredients for the washing and waxing of motor cars, in one operation. A trademark and patent application had been filed with the U. S. Patent Office, the petition declares.

About March, 1959, the petition claims a Union Carbide salesman, Robert McQueen, who previously had sold chemical supplies to Hanlon, questioned the company president, Patrick G. Hanlon, concerning the formulation, ingredients and manufacturing process of the product. When Mr. Hanlon said that he wanted to keep such details secret, the petition states Mr. McQueen said that any such information provided would be kept secret and confidential by himself and his employer and would not be used in any way by him or his employer to compete with Hanlon. The plaintiff in his petition said he relied on these unequivocal assurances and provided Mr. McQueen detailed information and even permitted him to view special machines in the Hanlon plant, contrived by Hanlon specifically for making the sponge product.

The petition declares that beginning about February, 1961, Union Carbide Corp. breached and violated a confidential relationship and began advertising, manufacturing and selling a product containing essentially the same formula and major ingredients as Hanlon's product in direct competition with the plaintiff.

—★—

Airkem Names Three

Gerard E. Smith has been appointed vice- president in charge of sales for the western hemisphere, and has been elected to the board of directors of Airkem, Inc., New York, it was announced recently.

It was also announced that Frederick T. Warner has been appointed assistant vice-president of administration, and Claude J. D'Angio, assistant vice-president in charge of research.

—★—

Click Sales Increase

Millard Fisher, sales manager of Click Chemical Corp., Mount Vernon, N. Y., recently reported that sales for the first six months of 1961 gained 13 per cent compared to the like 1960 period. Click, with plants in Mt. Vernon, New York and Cartersville, Georgia, produces a full line of para-dichlorobenzene and naphthalene products for deodorant and moth control purposes. For the past few years Click has been a leader in packaging innovations for deodorant and moth products.

Click became a publicly held company last January and 100,000 shares were fully subscribed at the $3.00 per share offering price.

—★—

Bon Ami Names Agent

Ralph A. Schwaikert, president of Bon Ami Co., New York, recently announced the appointment of Overseas Management Services, Inc., New York to operate the company's international division in an effort to expand business abroad.

"Bon Ami" in its original cake form, and new products bearing this well known name, have not been shipped in quantity to any foreign country since World War II. Today they are being made and marketed in Australia, Canada and Mexico. In addition, manufacturing arrangements have been recently concluded in Columbia and Italy.

William D. Vaughn, president of O. M. S., Inc., has appointed Gordon Reese, of his staff, as manager of the Bon Ami account.

Bon Ami Co., New York, has engaged Overseas Management Services, Inc., New York, to operate its international division. Pictured after the signing are Ralph A. Schwaikert, right, president of Bon Ami, and Gordon Reese, O.M.S., Inc., appointed as manager of the account.

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GAF Names Hyatt

Robert C. Hyatt has been appointed director of marketing for Antara Chemicals, a division of

R. C. Hyatt

General Aniline & Film Corp., New York, it was announced recently. He succeeds James M. Cloney, who has been named general manager of the firm's Ozalid Division.

Mr. Hyatt, formerly director of marketing for the company's Collway Pigments Division, is responsible for all marketing activities of the Antara Chemicals Division. He will maintain headquarters at 435 Hudson St., New York.

—★—

Armour Appoints Misamore

J. W. Misamore has been appointed advertising and sales promotion manager of Armour Industrial Chemical Co., Chicago, it was announced recently.

Mr. Misamore was previously advertising and sales promotion manager of the Koroseal Division of B. F. Goodrich Co., Marietta, O. Prior to that he handled publicity for B. F. Goodrich Chemical Co., Cleveland.

—★—

Texize-Hood to Merge

Plans to merge Texize Chemicals, Inc., Greenville, S.C., and Hood Chemical Co., Ardmore, Pa., were announced July 3. Subject to approval by Hood stockholders, shares of Texize common stock will be issued to shareholders of Hood.

Texize manufactures and distributes industrial and household cleaning and laundry products, textile and industrial chemicals from plants in Greenville and Palestine, Tex., and Tampa, Fla. Sales for 1960 exceeded $15 million.

Hood, which manufactures cleaning and laundry products in Medina, O., Plainfield, N. J., Jacksonville, Fla., and Charlotte, N. C., had sales of approximately $4.5 million in 1960. All plants of the two firms will continue in operation.

—★—

Purdy Rejoins Onyx

George R. Purdy, previously associated with the company for 26 years, has rejoined Onyx Chemical Corp., Jersey City, N. J. He left the company in 1956 to form the Karasell Chemical Co. Mr. Purdy, who most recently had been associated with Refined Products Corp., Lyndhurst, N. J., will serve as a technical sales representative for New York, New Jersey and eastern Pennsylvania.

—★—

Wrisley Appoints Fornero

George M. Fornero has been appointed to the private brand sales staff of Allen B. Wrisley Co., Chicago, it was announced recently. Mr. Fornero was formerly associated with Patricia Stevens Cosmetics Co., Chicago as general sales manager, and Continental Filling Corp., Danville, Ill., as a regional sales manager.

George M. Fornero

P&G Names Garvey

Procter & Gamble Distributing Co., Cincinnati, recently announced the appointment of J. J.

J. J. Garvey

Garvey as southern zone manager in the bulk soap sales department. Mr. Garvey, associated with the company for the past seven years, will be headquartered in Atlanta, Ga.

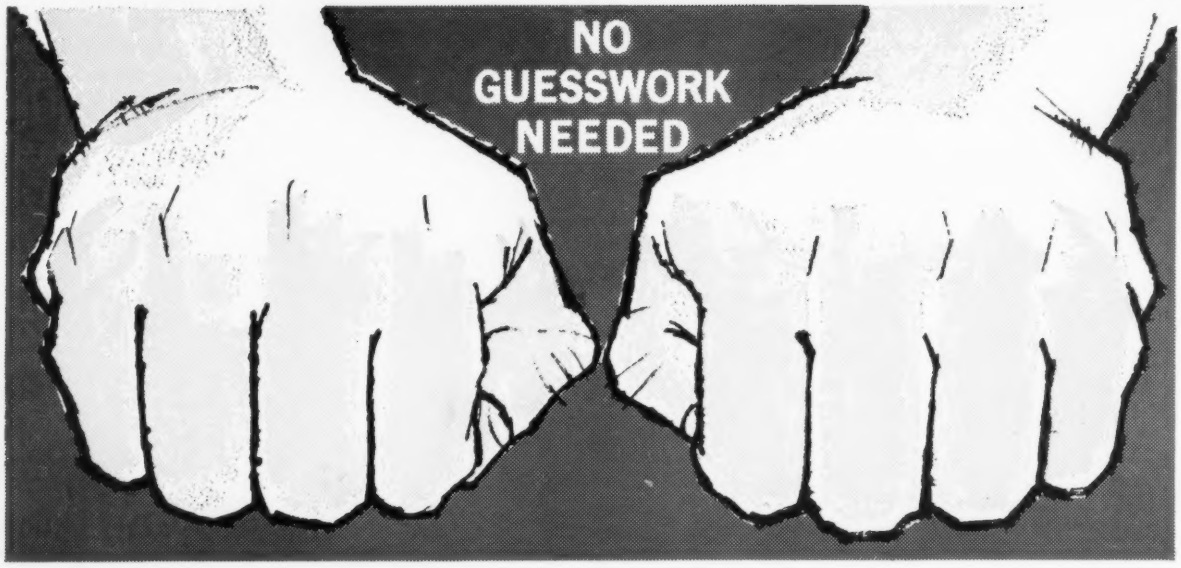
—★—

A. M. Schwartz Honored

Anthony M. Schwartz, manager, industrial chemical division, Harris Research Laboratories, Inc., Washington, D. C., received the Award of Merit of the American Society for Testing Materials at ASTM's 64th annual meeting held recently in Atlantic City, N. J. Dr. Schwartz was honored "in recognition of outstanding service in the development of test methods and processes in Committee D-12 on Soaps and other Detergents."

A member of ASTM and D-12 since 1952, Dr. Schwartz received in 1960 the D-12 award in recognition of his contributions and service in the field of detergents. Having served on various D-12 subcommittees in the past, he is currently chairman of G-2 on Nomenclature and Definitions.

Dr. Schwartz is senior coauthor of two monographs: *Surface Active Agents*, co-authored by J. W. Perry; and *Surface Active Agents and Detergents*, co-authored by Dr. Perry and J. Berch. Both have become standard texts in the field.



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Marks 30th Year with C-P

Leo A. Scott, vice-president for manufacturing of the Colgate-Palmolive Co., New York, marked

Leo Scott

his 30th anniversary with the organization on July 7th.

Mr. Scott, who has served as vice-president since 1957, began his career in 1931 as an assistant chemist in Colgate's Kansas City plant. Prior to being named a vice-president, he served as director of manufacturing for the household products division.

★

McElroy on Fund Raising

Neil H. McElroy, chairman of the board, Procter & Gamble Co., Cincinnati, was the principal speaker at a June 6th dinner meeting held at the Dayton (O.) Biltmore Hotel, of the Eleventh Annual Campaign Leaders National Conference, sponsored by United Community Funds and Councils of America.

Speaking before 400 volunteer campaign leaders from the United Funds and Community Chests in the United States and Canada, Mr. McElroy stated, "corporations that fail to help meet the needs of their communities are largely relics of the past." He pointed out that corporate giving to United Fund campaigns has risen steadily in the last decade, due to the spirit of civic responsibility which is a part of modern business management.

He added, "management should consider the corporation's position in each locality on the basis of an individual relationship. Policies appropriate in one may not be right for another." Also, "the community has its own obligation to help its corporate citizens make sound local judgement. Where contributions are concerned, great dependence must be placed on the professional and volunteer fund leaders in charge. Recipient organizations have a duty to show that the funds they receive are well and wisely used."

★

Opens West Coast Office

Olin Mathieson Chemical Corp., New York, has opened a sales office for organic chemicals at 3848 E. Colorado St., Pasadena, Calif., it was announced recently. D. D. Westerfield, organic chemicals sales representative, will be headquartered at the new office, handling West Coast customers.

★

Crisp Products Expands

Crisp Products, Inc., Warminister, Pa., producer of "Mimi" spray fabric sizing, recently announced plans to build additional facilities at its plant there. Distribution of "Mimi" will soon be expanded to a national scale, it was reported at a recent stockholders meeting.

McWhirter Pennsalt V-P

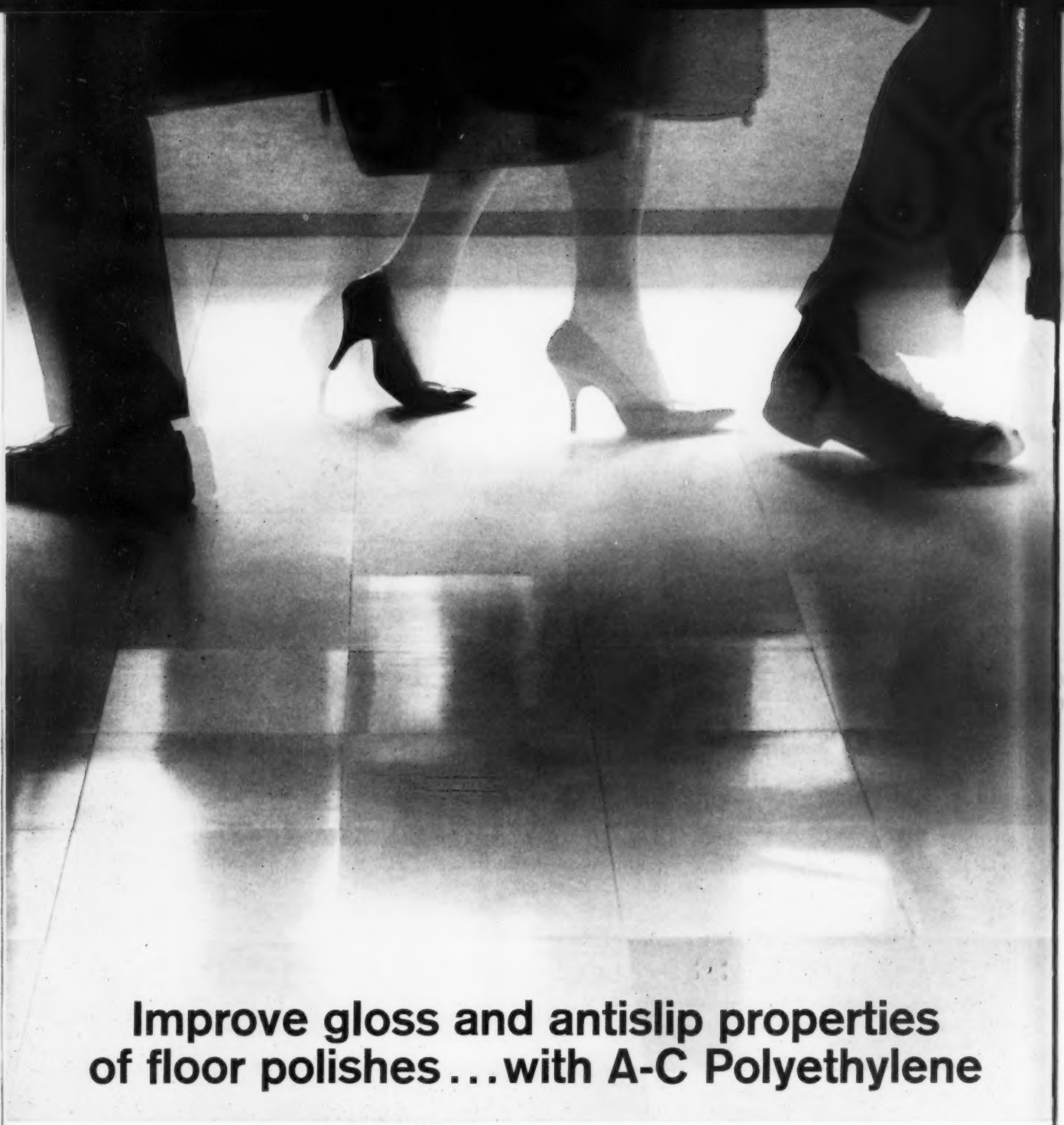
James McWhirter, general manager of industrial chemicals division, Pennsalt Chemicals Corp.,

James McWhirter

Philadelphia, has been elected a vice-president of the company, it was announced recently.

Associated with the firm since 1945, he served successively as plant superintendent at Pennsalt locations in Natrona, Pa., Calvert City, Ky., and Wyandotte, Mich. In 1952 he was appointed manager of manufacturing for the newly-formed industrial chemicals division-east, and was named director of personnel in 1958. Mr. McWhirter was appointed general manager of industrial chemicals division—east in 1960.

David Murray, center, receives Rambler station wagon as first prize in Lien Chemical Co., Franklin Park, Ill., contest for salesmen of sanitary maintenance supplies. Ralph Herst, left, national car distribution manager for American Motors Corp., Racine, Wis., presents car. Standing by is Edward L. Hitchcock, Lien general sales manager, who informed Mr. Murray of his advancement to Milwaukee branch manager.



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BASIC TO AMERICA'S PROGRESS

Pennsalt Names Binns

Melbourne P. Binns has been named Atlanta regional manager of the industrial chemicals

Melbourne Binns

division, Pennsalt Chemicals Corp., Philadelphia, it was announced recently. He succeeds Robert W. Wurst, recently deceased.

—★—

FTC Complaint Hearing

A Federal Trade Commission hearing on a formal complaint against Continental Wax Corp., Mt. Vernon, N. Y. for alleged false advertising in the sale of floor waxes was held July 24, at New Orleans.

—★—

Snell to Test Finishes

Revised specifications covering finishes for floors of northern hard maple have been issued for the Maple Flooring Manufacturers Association, Chicago, by Foster D. Snell, Inc., New York, consulting chemists and engineers. As official laboratory for the MFMA, Snell will start testing based on the new specifications September 1. Samples were accepted beginning August 1.

The new specifications supercede those published in 1958. They establish upgraded standards for finishes for both heavy duty and gymnasium floors. All finishes meeting the new specifications when tested will be placed on the MFMA approved list issued by the Association.

Copies of the specifications may be obtained from the Maple Flooring Manufacturers Association, 35 East Wacker Drive, Chicago 1, or from Foster D. Snell, Inc., 29 West 15 St., New York 11.

—★—

Dillinger M-P Starch Head

Richard H. Dillinger has been appointed manager of starch sales, a newly created position at Morningstar-Paisley, Inc., New York. He coordinates and is responsible for sales and promotion of ethylated, oxidized and cationic starch derivatives, dextrine products and pregelatinized starches. Mr. Dillinger, formerly assistant manager of the M-P paper department, has spent 25 years in the starch industry.

Morningstar-Paisley recently completed a 52,000 square foot starch extraction and processing plant at Carys Mills, Me., with an annual capacity of 10,000 tons of chemically modified starches.

—★—

Carter Elects Hoyt

Henry H. Hoyt, who joined the company in 1930, has been elected chairman of the board of Carter Products, Inc., New York, it was announced recently.

Kirby Peake was named president, succeeding Mr. Hoyt. Mr. Peake was president of the Vick Chemical Company Division of Richardson-Merrell, Inc., New York, for 12 years, before joining Carter as administrative vice-president in 1959. He was elected a director in 1960.

Henry Hoyt

Metelski to Interdonati

Appointment of John J. Metelski as manager of the special chemicals department of Henry

John Metelski

Interdonati, Inc., New York, was announced recently.

Mr. Metelski was formerly with Charles Pfizer & Co., New York, as supervisor of sales in the export department, and prior to that was assistant export manager for five years with McKesson & Robbins, Inc., New York.

—★—

Monsanto Changes

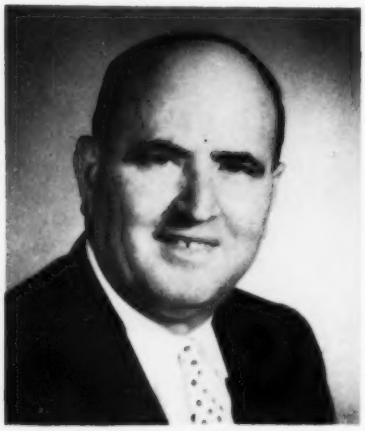
The inorganic chemicals division of Monsanto Chemical Co., St., Louis, Mo., has revamped part of its marketing organization to develop new markets for its products while giving existing customers expanded technical assistance.

Technical service personnel, who formerly worked in both areas, will now concentrate on customer assistance as members of various specialized product sales groups. At the same time, the formation of a market development group which will have the responsibility of expanding division product sales into new uses and new areas of marketing, was also announced.

James C. Barnett, formerly manager of technical sales, has been appointed market development manager, and Roger G. Ditzel, formerly detergent supervisor, becomes supervisor of market development.

Meer WSGA President

Ellis Meer, president of Meer Corp., processor of gums and botanicals, North Bergen, N. J.,



Ellis Meer

has been elected president of the Water Soluble Gum Association, it was announced recently. Mr. Meer has been associated with the water soluble gum industry since 1926. He has done much work on standards and applications of these products, with special emphasis on gum tragacanth.

Mr. Meer has been a member of the WSGA for ten years, and has served as an executive officer for the past four. He has also contributed to the association's quality control standards.

—★—

Pierce Heads New District

Henry F. Pierce has been appointed district manager of a newly formed midwest agricultural chemicals sales district of Hercules Powder Co., Wilmington, Del., it was announced recently. The new district, covering 14 midwestern states, will have its headquarters in Louisiana, Mo. Mr. Pierce is responsible for the sale of Hercules pesticides and plant foods product lines.

Mr. Pierce joined Hercules in 1951 as a technical sales-service representative for the Naval Stores Department. In 1952, he was named senior technical sales representative of Naval Stores products in the San Francisco territory. He returned to the home office in 1956 as a senior technical sales representative, specializing in pesticides. In 1959, he was named assistant sales manager of the agricultural chemicals divisions which is now a part of the synthetics department.

—★—

Penick Offers Compounds

Benzoyl formic acid (phenyl glyoxylic acid) and methyl benzoyl formate are now available in development quantities from S. B. Penick & Co., New York, it was announced recently. According to Giles St. Clair, vice-president for product development, these bifunctional compounds should be useful as intermediates for pharmaceutical, veterinary and agricultural chemicals. Intermediates of similar chemical structure have been used in insect repellents, local anesthetics, sunscreening agents and hair-waving compositions.

—★—

Fleuroma Names Warner

David J. Warner was recently appointed to the position of field sales manager, Fleuroma, Inc., Long Island City, N. Y., it was announced by A. E. Eisenkraft, sales manager.

Mr. Warner, with Fleuroma for the past seven years, will work under Mr. Eisenkraft in the handling of the company's sales activities. He is a past president of the CIBS, and a member of the BIMS, both in New York.

David Warner

Antara Appoints Brunson

William C. Brunson has been named midwest regional sales manager for Antara Chemicals Di-

W. C. Brunson

vision of General Aniline & Film Corp., New York, it was announced recently. He succeeds G. A. Brost who became product manager for intermediates, in June.

—★—

Stauffer Div. Phosphate

Anderson Chemical Division of Stauffer Chemical Co., New York, has installed a new unit at Weston, Mich., to produce tributoxyethyl phosphate and other trialkyl phosphates by an improved process, it was announced recently.

Tributoxyethyl phosphate is used in floor polishes and in polystyrene, polyacrylate, and styrene acrylic copolymer formulations. As a plasticizer it is said to improve leveling and spread. It can be emulsified and is compatible with many resins, polymers, and natural waxes.

For some floor wax compositions tributoxyethyl phosphate is used as a co-plasticizer with tributyl phosphate or phthalate plasticizers. The combined effect is to render the ingredients mutually compatible, the company states. This process is employed mainly with carnauba wax, shellac, polystyrene compositions. Tributoxyethyl phosphate is not completely compatible with some micro-crystalline waxes, it was reported.

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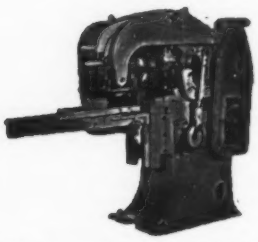

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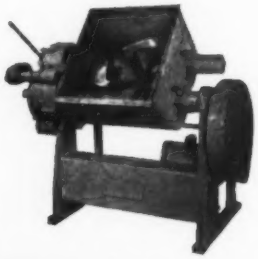

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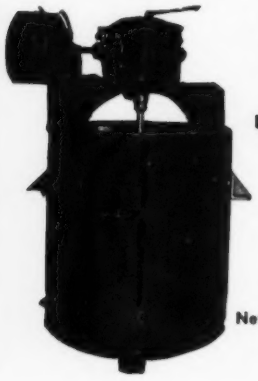

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Mgr. Soap Production: Over 25 years experience in production of toilet, laundry, coconut and glycerience soaps. Very well versed in manufacturing of detergents and all related fields. Good organizer. German background. Fluent in German, Spanish. Newcomer seeks employment. Address Box 646, c/o *Soap*.

Chemical Salesman: 12 years experience. Currently selling cosmetic, chemical specialty, pharmaceutical, aerosol and perfume accounts in New York, New Jersey, Philadelphia, Baltimore and New England. Strong product development and new material background in all types of products. Technical and business education. Address Box 647, c/o *Soap*.

Office/Sales Mgr.: 28, seeks position with manufacturer of cosmetics or toiletries in N. Y. area. Has drive, initiative, imagination. Highly experienced in customer relations, order processing, correspondence, contact with salesmen; thoroughly familiar with traffic and production expediting. Fluent German, Italian, some French. Address Box 630, c/o *Soap*.

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Small company in mid-west manufacturing cleaners, germicides, insecticides, rodenticides, dishwashing and laundry products, and other chemical specialties. Long established, well-known firm. Owner prefers only small cash payment and to be continued on a retainer basis of some sort, or a royalty arrangement. Opportunity for larger firm to take over our well established items and develop them. If you have the outline of a proposal, send it along. But I am not interested in selling out cold for cash.

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Soap Plant: Going soap plant in Albany, New York. Sell or rent. For manufacture of soaps, chips, powder. Confidential. Address Box 651, c/o *Soap*.

For Sale

For Sales: Dryers — Proctor & Schwartz 1 two roll three section. 1 five roll two section. 1 Triangle powder carton filler and seamer model SHA. Fitzpatrick Bros. Inc., 1300 W. 32nd Place, Chicago 8, Ill.

For Sale: Preform tablet press similar to Stokes model R. Perfect condition. $1200.00 Nycco Products Co., 110 W. 29 St., New 1, N. Y.

For Sale: By I. E. Newman, 818 W. Superior, Chicago, Ill., CH-3-1425. Mixers. Marion-Munson, sizes 50# to 10,000#; Crutchers—1,000-8,000#; Wrapper Type S; Auto Cutting Table; Bucket Elevators, Mills, Cutters, Crushers, Soap Equipment. Prices on request.

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(Continued on Page 182)

For Sale

For Sale: Buflovak 42" x 120" dbl. drum dryers, Sharples #16V inconel soap centrifugals, Hope single piston stainless filler. Perry Equipment Corp., 1410 N. 6th St., Phila., 22, Pa.

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—★—

Florasynth Honors Ross

Raymond Ross, a member of the sales staff of Florasynth Laboratories, Inc., New York, was recently honored for completion of 25 years of service with the firm. Mr. Ross handles accounts in the New York metropolitan area.

Branigan Ends Tour

George Branigan, vice-president of Ungerer & Co., New York, recently returned to the United States after completing an extensive tour of South America. Mr. Branigan, with the company for over 39 years, made a one month tour of Columbia, Equador, Peru, Chile, Argentina, Bolivia and Brazil, in which he visited various principals and areas of essential oil and aromatic chemical production.

—★—

Flam-Haft Moves

Flam-Haft Laboratories, Inc., formerly located at 8 East 12th St., New York City has moved to larger facilities located at 832 Broadway, New York 3, it was announced recently by Jacques A. Masson, president.

—★—

Fritzsche Names Wien

Appointment of Walter Wien as sales promotion director of Fritzsche Brothers, Inc., New York, was announced recently. Mr.

Walter Wien

Wien has held executive positions in the sales promotion and public relations fields in New York, in recent years.

—★—

BIMS Golf Tournament

The BIMS Third Golf Tournament of 1961 was held at Wheatley Hills Golf Club, Long Island, N. Y., on Tuesday, August 15th.

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Miscellaneous Publications of the Entomological Society of America

This new periodical contains timely and scholarly articles of 20 printed pages or more. The individual numbers appear at irregular intervals. Each volume will contain about 200 pages.

Volume 1, Number 1, pp. 1-32 appeared October 1, 1959, and contains the symposium papers on Insecticide Resistance in Arthropods of Medical and Veterinary Importance given at the Salt Lake City meeting in December 1958. Authors H. F. Schoof, R. B. March, A. W. A. Brown, and Herbert Knutson. Single copy, $2.50.

Volume 1, Number 3, pp. 69-171 appeared July 27, 1960 and contains the following: "Swarming and Mating in Mosquitoes," by Erik Tetens Nielsen and James S. Haeger. "A Revision of the Genus *Chlaenius* Bonelli (Coleoptera, Carabidae) in North America," by Ross T. Bell. Single copy, $6.00.

Volume 2, Number 1, pp. 1-175 appeared October 19, 1960 and contains the 23 papers presented at the Symposium — Research Progress on Insect Resistance held at Washington, D. C., October 7 and 8, 1959. Single copy, $7.50.

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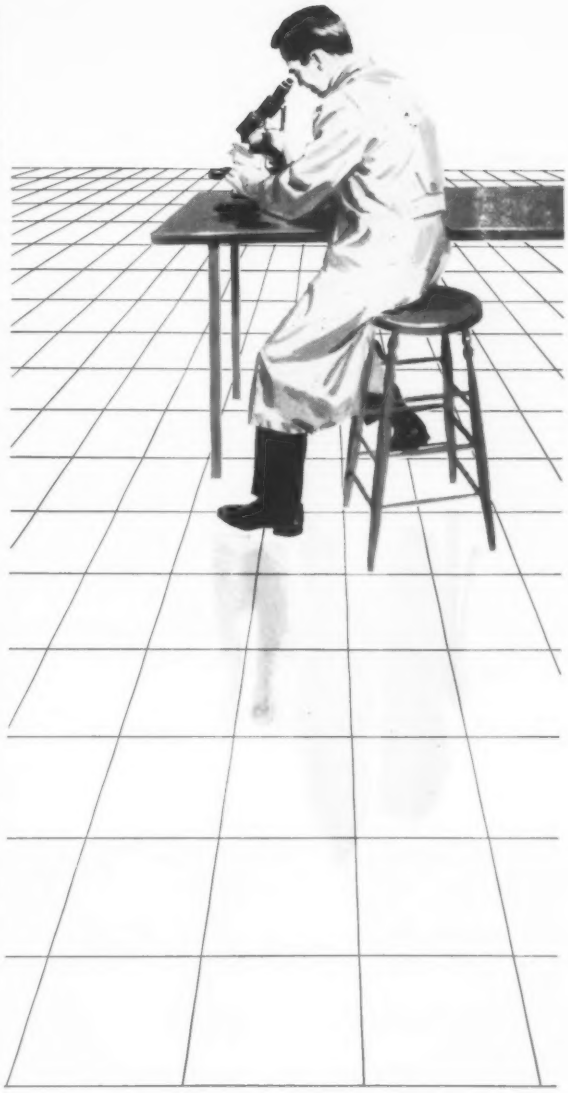

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Alpine Names Mrs. Gardner

Alpine Aromatics, Inc., Metuchen, N. J., has named Audrey Gardner of Los Angeles as sales

Audrey Gardner

representative to cover the Los Angels area, it was announced late last month by Raoul Pantaleoni, Alpine president.

Alpine makes fragrances, masking odors, and industrial deodorants for use in aerosols, soaps, detergents, household chemical specialties, and other applications.

Mrs. Gardner was previously associated with another manufacturer of perfume oils and specialties used in the soap, cosmetic and cleaning materials fields. Previously she was head of a small firm engaged in the manufacture of bath oils, perfumes and toilet water.

Plastics for Packaging

(*From Page* 115)

tainer. Furthermore, we gave some ground in that an unwanted attribute entered the picture. This is the attraction which the blow molded plastic linear polyethylene container has for dust and dirt.

When we balance out where we were and where we are now in terms of our objectives for that particular product, we see that we have come a long way but not quite the full distance.

Our market research department recently completed a survey in which one of our products, packed in identically shaped containers, one being all plastic and the other a composite can, disclosed an interesting finding. Overwhelming preference was expressed for the product in the plastic package! This finding can be attributed *only* to the package. The "feel and squeezability" of the plastic container were reported to be very desirable attributes.

Still another example – today marketing people are striving with might and main to stay ahead of competition. Deals, premiums, price-offs and coupons are becoming more commonplace. When it is desired that the premiums be visible to stimulate impulse purchasing, we are overwrapping these with our products in a printed, transparent, heat sealable film. Film transparency then becomes of major importance, in addition to the material criteria previously mentioned.

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"Baggies" double as product container and for reuse by the housewife.

I am certain that you would be the first to agree that it would be highly desirable to merchandise a plastic product in a plastic package. While we haven't quite reached that stage, we are marketing a plastic product to be *used* as a container. This item is our "Baggies," a *disposable* plastic bag for such diverse uses as a food storage container, as a bag to hold traveling items, as a container for damp pre-ironing storage, for babies' supplies, etc.

We estimate that our packaging laboratory is alloting about 50% of its time in the development and evaluation of plastics for potential uses. Over the last two months, we have held approximately 30 discussions concerning plastics with sales and/or technical representatives. The interests covered by these representatives ranged from those of the prime resin supplier to the convertor. Our efforts, you see, are both extensive and intensive.

Where do we go from here? We think that there is an almost unlimited field ahead for these synthetics. The ability of plastics to be fabricated into eye appealing shapes, to protect a host of products and to eliminate the hazards of personal injury are prime merchandising factors. But to supply a mass market, we must also have total low packaging costs — the sum of the costs of the container, its decoration, and its handling in our factories. Then, we believe, the use of these fascinating materials will be more speedily extended.■

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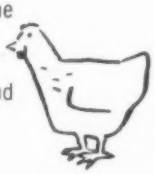

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COMING MEETINGS

American Chemical Society, 140th national meeting, Chicago, Sept. 3-8.

American Hospital Association, 63rd annual meeting, Convention Hall, Atlantic City, N. J., Sept. 25-28.

American Oil Chemists Society, national meetings, Pick Congress Hotel, Chicago, Oct. 30-Nov. 1, 1961; Roosevelt Hotel, New Orleans, May 7-9, 1962.

Canadian Manufacturers of Chemical Specialties Association, fourth annual meeting and conference, Royal York Hotel, Toronto, Oct. 30-Nov. 1.

Chemical Industries Exposition, Coliseum, New York, Nov. 27-Dec. 1.

Chemical Specialties Manufacturers Association, 48th annual meeting, Roosevelt Hotel, New York, Dec. 4-6, 1961; 48th midyear meeting, Drake Hotel, Chicago, May 14-16, 1962.

Chemical Specialties Manufacturers Association, Western golf tournament, Itasca Country Club, Itasca, Ill., Sept. 19.

Chicago Perfumery & Extract Ass'n, Par-Busters' Golf Outings, Swing Party, Glen Flora C. C., Waukegan, Ill., Aug. 17; Calumet C. C., Homewood, Ill., Sept. 14.

Drug, Chemical and Allied Trades Association, annual meeting, Pocono Manor Inn, Pocono Manor, Pa., Sept. 14-17, 1961.

Entomological Society of America, ninth annual meeting, McAllister Hotel, Miami, Fla., Nov. 27-30.

Federation of European Aerosol Associations, 3rd International Congress, Lucerne, Switzerland, Oct. 3-8.

National Chemical Exposition, Amphitheater, Chicago, Sept. 5-8, 1961.

National Agricultural Chemicals Association, annual meeting, Homestead, Hot Springs, Va., Oct. 29-Nov. 1.

National Hotel Exposition, Coliseum, New York, Nov. 6-9.

National Pest Control Association, annual convention, Deauville Hotel, Miami Beach, Fla., Oct. 16-19.

New York Premium Show and Premium Advertising Conference, New York Coliseum, Sept. 25-28, 1961.

Packaging Institute, 23rd annual national packaging forum, Biltmore Hotel, New York, Oct. 18-20.

Packaging Machinery Manufacturers Institute, (PMMI) fourth annual show, Cobo Hall, Detroit, Nov. 7-10, 1961.

Sanitation Maintenance Show and Conference, 6th annual, Sept. 26-28, Hotel Sheraton, Philadelphia.

Society of Cosmetic Chemists, annual seminar, Barbizon Plaza Hotel, New York, Sept. 26-27; annual meeting, Biltmore Hotel, New York, Nov. 28; Chicago Chapter, monthly meetings, Henrici's Restaurant, Merchandise Mart, Sept. 12; Oct. 10, Nov. 14.

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tale ends

LEARNING can be a painful process. Sometimes even physically painful as Bob Ackerly of Cummings & Sellers, Washington, D. C., legal counsel for the Chemical Specialties Manufacturers Assn. found out recently. Bob had been learning to water ski while on a short vacation with his family at Virginia Beach. Bob took a tumble and banged up his shoulder, which required treatment by an osteopath. In spite of his "infirmity," Bob showed up for the Food and Drug Administration hearings on the proposed regulations for the Hazardous Substances Labeling Act. Bob did yeoman service in preparing a written brief and the oral presentation at the hearing. Kudos, also, to Charlie Beach for his handling of the oral presentation at the hearing in Washington on July 13.

* * * * *

Charlie, incidentally, has a busy schedule of events for the remainder of the summer and early fall. First, he celebrated his 25th wedding anniversary on August 9. Early in September his son's wife is expecting to present Charlie and Mary Selma with their first grandchild. Having successfully cleared those two "hurdles," the Beaches will prepare for an October wedding of their daughter Sandra ("Sandy" Beach, get it?). Aside from his social obligations and his activities as president of the Chemical Specialties Manufacturers Assn., Charlie will spend a little time at his regular, paid job as vice-president and general manager of John C. Stalfort & Sons, Inc., Baltimore.

* * * * *

Shark repellents are in the news again with the annual reports of the appearance of these fish off the bathing beaches along the Atlantic coast line. A chemical repellent made by Presto Dyechem is being tried out in Long Beach, N. Y., in an effort to protect bathers. Meanwhile, back in New Jersey a legislator has proposed a bill that would require coastal communities to take steps to rid sharks from their shores.

* * * * *

Quite a turnout for the FDA hearing in Washington, D. C., July 13-14 on the proposed regulations for the enforcement of the Federal Hazardous Substances Labeling Act. Legal eagles for chemical specialties makers were a dime a dozen. One of the most interesting oral presentation made at the hearing was by Paul Butler, former national Democratic chairman, who represented du Pont. Paul, a practicing lawyer from South Bend, Ind., really did a snowball job on the proposed regulations, in the opinion of many of the 200 or so on hand for the hearing.

* * * * *

Although the hearing were serious for the most part, there were some light moments, too. After being called to give his views on three or four occasions, the representative of Commercial Solvents Corp. finally did so, but only after he made certain that the CSMA presentation had been made. Another laugh was evoked by the spokesman for Armstrong Cork Co. He pointed out that in order to test the oral toxicity of the adhesive his company makes for flooring coverings in the amount specificed by FDA's proposed regulations it would be necessary first to anaesthetize the rat to force the stuff down his throat.

* * * * *

Bugs in the Kremlin? A study group from the U. S. Department of Agriculture reported that bedbugs are a major pest in Russia. On the other hand, termites are practically unknown. Must be the weather,—or something. Bedbugs live indoors. Maybe termites don't like those 50 deg. below weather they get now and again in Russia. Some of our enterprising pest control operators might think about opening branches in Moscow. Bedbugs are duck soup for an experienced operator.

* * * * *

A lady doctor in England, one Dr. Ann Mullins, mother of six children, thinks that "this cleanliness cult has gone too far,"—that is cleanliness for children. She said that too much cleanliness can raise a barrier between child and the outside world that hinders the child's development. Well, we have a hunch that the barrier might be even higher for dirty, stinky kids. But the doctor says she makes her children wash their hands before meals. Why if this "dirty and happy" theory holds water?

* * * * *

Recently our demon shopper who prowls the soap and toilet goods counters of the department stores, tried to buy toilet soap in the luxury class, but one containing hexachlorophene or other germicidal additive. Her query to the sales lady brought only a blank stare. Hexachloro—what? She countered with an offer of a lanolin soap. Our patient shopper explained again. Still no light of understanding. In fact, the sales lady's glance branded our shopper as a nut. Said lady shrugged and walked away. It happened in Gimbels in New York.

* * * * *

Soap and detergent shortages in Cuba are one of the side-lines of Castro activities, reports state. Laundrymen and housewives have been loud in their protests, including some public demonstrations, against the shortage. But the Cubans, it seems, can't get blood from a turnip nor soap from thin air. As usual, the "imperialistic Yankee" blockade is held responsible for the shortage by the Castro gang. Maybe they could get some soap from Russia, that is if the Russians have any to spare, which we doubt.

TO THE WINNER . . . goes the trophy. Fred Lodes, Lodes Aerosol Consultants, Inc., New York, receives trophy for winning second annual eastern golf tournament of the Chemical Specialties Manufacturers Assn. from A. A. Mulliken, CSMA secretary, right. Fred, who was chairman of the golf tournament committee, had a low gross score of 76.